Health Status Report
1998

Yukon
Health and Social Services

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FOREWORD

The health status of Yukon people — where from and where to?

The first purpose of a Health Status Report is to provide a cross section of the state of health of a population. Its next purpose is to provide information, which allows the assessment of changes in health status over time. Yukon Health Status Reports are a recent institution and there is generally not enough accumulated data for the long view. Health care workers and planners often lament the state of the population's health as reflected by the people they deal with daily. The question is often "are things improving or are we just putting out fires?" Fortunately, measures and statistics are not the only way to assess progress. Our population is small and relatively confined and our health services and institutions are centralized. This makes it possible to build a descriptive picture of trends based on the opinions of health care workers with a long Yukon experience.

There is no doubt that there have been great improvements in the health of the population over the last 25 years. There has been a noticeable decline in major trauma resulting from motor vehicle accidents. This is probably a result of the crackdown on drinking and driving, better roads and seatbelt legislation. Gunshot wounds and other injuries resulting from interpersonal violence are also down.

The most spectacular changes, as assessed by the relatively crude indicator of hospital admissions, have been in the area of children's health. Twenty-five years ago there were 24 beds in the children's ward at Whitehorse General Hospital. Review of the admission and discharge books over time showed that the main causes for admission of children were related to less than adequate living conditions similar to those seen in developing countries. Diarrhea and dehydration, malnutrition, failure to develop normally, upper and lower respiratory diseases, meningitis, severe impetigo and others, mostly infectious diseases, were the major causes of admission. Today, despite the fact that the population has more than doubled, there are only four beds on the children's ward. While there is no doubt that this partly reflects changes in methods of care delivery this alone could never account for the magnitude of the changes. Causes for admission now resemble those seen in southern Canada, with trauma and surgical problems leading the way.

The improvement in health status is likely due to the progress made in a political environment that has, over the last 25 years and despite apparent setbacks from time to time, facilitated self determination and community development. These changes have been clear and rapid and, despite the fact that we have a long way to go, should be a source of some satisfaction to successive Yukon, municipal and First Nations governments and to all Yukon people.

Despite these obvious improvements there are still stubborn pockets of ill health that are not as obvious as previously and therefore are more easily ignored. The chief signs of these are alcohol and drug abuse and their effects, high trauma and suicide rates, shortened life expectancy, high teen pregnancy rates and high rates of sexually transmitted diseases - among others documented in this report. How are these to be dealt with?

The more traditional approach has been to identify "Risk Groups" and to target these groups with "Interventions". Hence there are alcohol and drug programs, communicable disease control programs, family violence programs, child development programs and a host of others all vying for attention and dollars. These programs, while they may have some effect, are largely secondary prevention - they are directed at illnesses and disease that have already happened, with the intent of reducing damage and preventing further

damage. Though their necessity is not in dispute, they do almost nothing to prevent the occurrence of these problems in the first place - they are not primary prevention. To begin to look at the possibility of primary prevention the underlying causes must be understood and addressed.

There is little dispute among public health professionals that a major underlying cause is social and economic inequality. If this report demonstrates anything it is that there is more inequality in the Yukon than in the rest of Canada as a whole. The results of this inequality are differentials in income, housing, nutrition, education, and access to services and opportunity. Those on the lower socioeconomic rungs have less control over their lives, fewer tools for good decision-making and less connection to networks that offer support, employment, and life improving opportunities in general. While specialists in this area understand this, there is still at least a partial failure to face these unpopular truths on the part of decision-makers and community leaders. Perhaps the main reason for this is the perceived lack of solutions to social and economic inequality. While there are no one-shot, cure-all solutions to inequality, recognition that this is a serious problem in the Yukon is the first step to developing possible approaches.

As a beginning, if the same consideration were given to the health impact of regulations, new development, new legislation etc. as is now given to the environmental impact, a big step in the right direction would be taken. Healthy people are the best guarantors of a healthy environment. Every piece of policy, whether it concerns a new school, a mine opening, a new hotel, a sewage treatment plant, or the decision to build a sports complex should be "healthy". Where environmental impact is an important consideration, human health should be part of the environmental equation. Healthy public policy should be more than a catch phrase.

The Government of the Yukon has only recently become responsible for most health services and programs for the Yukon. Responsibility for other areas such as the environment are in the process of being devolved to the Yukon. Now is the time to re-identify problems and priorities in health and to develop an innovative, made-in-Yukon approach to population health.

Frank Timmermans
Medical Officer of Health, Yukon

CHAPTER 1: INTRODUCTION

Health can mean many things. The Yukon *Health Act* defines health as **"the physical, emotional, social, mental and spiritual well-being of residents of the Yukon in harmony with their physical, social, economic and cultural environments".** The World Health Organization defines health as **"a state of physical, mental and social well-being and not merely the absence of disease and infirmity"**. From these definitions, it is clear that the current concept of health considers a wide range of factors including the physical, social, political and family environments as well as the more traditional internal environment of the individual.

Health status, or the state of health of a population, can be measured in a number of ways. The most common method is to use a set of indicators such as birth rate, death rate, infant mortality and life expectancy. The numbers expressing these indicators do relate to other, less measurable indicators and can be used to predict, with some accuracy, the general state of health of a population. Ideally, the addition of socio-economic indicators such as education levels, income, employment rates and others will round out the assessment. Trends in these indicators over the years will then show the direction of progress in health.

Comparisons between countries, regions and groups within society such as age groups, gender groups or income groups, can then be used to identify differences.

The purpose of health status reporting is to inform the Yukon government, policy makers, health care providers, and the public about:

1) the most recent reported levels and rates of selected diseases, health conditions, and other indicators of health and well-being, and what these tell us about the health status of Yukon people and of groups within our society,

   and, where possible,

2) significant health status trends and patterns within the Yukon population that emerge over time.

The intent of this health status report is to provide practical information that can support informed decisions, actions and planning aimed at improving the health of Yukon people.

1.1 BACKGROUND

The first health status report for the Yukon was released in 1991. The 1991 "Community Health Status Assessment of the Yukon" was the first to consolidate available Yukon data from various sources that could tell us about the health status of Yukon people. It was an important step towards a better understanding of the nature and distribution of health problems in the Yukon population.

A steering committee of Yukon health care providers, First Nations people, and government officials was formed to give direction and input to the process of developing this Health Status Report. The intent is to continue with this process and to make the assessment of health status in the Yukon an accessible, ongoing process rather than a triennial event.

Throughout this report, the 1991 Community Health Status Assessment, and the 1994 Health Status Report of the Yukon will be referred to.

In the first Health Status Report of 1991 (Community Health Status Assessment of the Yukon) data were presented for First Nations and others. The 1994 health status report did not present data split into First Nation and non-First Nation categories. This honoured a request from the Council for Yukon First Nations that such data splits not be done. It was felt that such splits tend to stigmatize and to reinforce stereotypes. Traditionally such splits have been presented in such a way that, to the non-professional at least, poor health status and First Nation origin are somehow directly related. Understanding and education have lessened the perceived need to identify health status and race. Except for genetically determined protection from some diseases and, conversely, susceptibility to a few others, there is clearly no association between disease and race. **There is, however, a very strong relationship between socioeconomic status and health status particularly since they are both outcomes of other underlying causal factors.**

The 1994 Health Status Report made use of the 1993 Health Promotion Survey. New information from the National Longitudinal Health Survey, though not necessarily asking exactly the same questions, is currently being analyzed and is not available for this report. This report makes use of all the data now available but it is recognized that these data sets are not yet as comprehensive as they could be. The development of further, relevant data bases, useful to future assessment of health status, is underway. This Yukon Health Status Report will detail the patterns and trends of selected measures of health and well-being, as reported through available data sources.

Every three years, the Yukon government will table in the legislature a comprehensive health status report, such as this one. These comprehensive reports will consist of a broad range of data tables, updated with the most recent data available, along with commentary to help the reader understand what the data can tell us about the health status of Yukon people.

In the years between reports, supplementary data, both completely new and updated from previous reports, will be made available as it is analyzed. This will produce a document in progress, continuously updated to make the latest information available.

1.2 WHAT IS IN THIS REPORT

This report contains several sections.

Chapter 2, the Executive Summary, outlines the key findings from the health status report.

Chapter 3 provides information about the structure of the Yukon population and the levels of income, education, and employment in the Yukon.

Chapters 4 - 7 explore a range of indicators, along with interpretive commentary, that tell about the health status of Yukoners. The report looks at mortality (rates and causes of death), morbidity (rates and types of illness and disability), other health and wellness indicators (such as self-rated health, happiness, and social relationships), and lifestyle risk factors.

Chapter 8 explores reproductive health data in the Yukon including pregnancy and birth rates, abortion rates and sexually transmitted diseases.

Chapter 9 looks at communicable disease rates and trends in the Yukon including emerging diseases.

Most of these chapters conclude with a set of "data and research questions" and some "priorities for action". These questions and priorities arise out of what has been found through researching and writing this health status report. ***They are intended as suggested areas of focus over the next few years - but they are not intended to be "a full and final listing" of everything that warrants attention.*** They - like all of this report - can serve to open further questions, generate discussion, and act as a catalyst for action on things that can improve the health status of Yukoners.

1.3 ACKNOWLEDGEMENTS

This health status report drew on the interest and expertise of a wide range of people. We would like to extend our particular appreciation to the following people for their contributions to this report:

- current Steering Committee members:

  Gerry Ewert - Yukon Bureau of Statistics
  Mickey Ferguson - Council for Yukon First Nations
  Joy Kajiwara - Health Services Advisor, HSS, Report Co-ordinator
  Pat Mandl - Communicable Disease Officer, HSS
  Ron Pearson - Director, Health Programs, HSS
  Frank Timmermans - Yukon Medical Officer of Health
  Violet Van Hees - Health Policy Planner, HSS

- Frank Timmermans, who authored this report and who, as Yukon Medical Officer of Health, has provided the commentary and epidemiological interpretation.

- Heidi Rumschiedt for the data in the morbidity and mortality section, Jeff Wackett for the section on reproductive health and Pat Mandl for the data on communicable diseases.

1.4 SOME COMMENTS

While recognized standard formats are used to report incidence and prevalence, readers should use caution when interpreting data and tables. Given the relatively small population of the Yukon (under 35,000 people), the absolute values (actual number) of many statistical events can be small. In such cases, a small change in actual numbers of people shows up as a large proportional change in the condition being measured. For example, if two people had tuberculosis in the Yukon in one year and three people the next year, this would show up as an increase of 50% but the actual numbers (and thus the actual significance of the problem) are very small. There might be just one case of tuberculosis in the third year resulting in a decrease of 67% that third year following the increase of 50% the year before. While sometimes this problem can be addressed by using figures for five or 10 year periods, this makes it difficult to determine trends.

Furthermore, small actual numbers tend to result in a great deal of variability and volatility of the data, i.e. data bulges and "blips" rather than a smooth or "typical" distribution pattern, resulting in a large amount of statistical variability in some Yukon data. The commentary that goes with the tables will help to identify areas where the numbers are too small to be statistically reliable.

This health status report is one further step along the road. With each successive report, we learn more about what health status reporting can do and how best to do it. Suggestions and input for future reports are most welcome and can be phoned or sent to:

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CHAPTER 2: EXECUTIVE SUMMARY

This report is the third Health Status Report since 1991. The process of preparing these reports, identifying the appropriate data and arranging for its collection and collation is a work in progress. The purpose of these reports is to provide data and interpretation that will inform anyone interested in the state of health of Yukon people as a group. It also attempts to identify areas where problems exist in the hope that politicians, planners and policy makers will use the data to plan appropriate interventions.

2.1 REPORT HIGHLIGHTS

What follows is a pocket version of this report that might save some of the agony of wading through what can sometimes be unavoidably dull. A quick look at the tables in the relevant chapter will then fill in most of the gaps.

CHAPTER 3: THE SOCIAL AND ECONOMIC CONTEXT

The population of the Yukon, after a steady increase of 3.3% per year since 1981, is falling. There has been a 3.9% (about 1250) decrease in population from 1997 to 1998.

The population continues to age and to approach the same age mix as that of the rest of Canada.

Gender distribution remains slightly skewed when compared nationally at 47% female and 53% male.

These demographic trends have wide ranging implications for economic activity, planning of facilities and services required for different age groups and for patterns of health care delivery. An older population generates considerably more health care costs.

The unemployment rate in the Yukon is higher than in the rest of Canada. It was 12.8% in 1998, up from 9.6% in 1996.

Income data is available only to 1995. Average Yukon income is higher than in the rest of Canada but the gap is less than that seen in the last report. There was an absolute decrease in income between 1992 and 1995 and this holds for Canada as a whole. The Yukon female income is 95% of male income, as opposed to 57% of male income in the rest of Canada. Yukon female workforce participation rates are also higher than the national average; 77.3% as opposed to 57.4%.

Yukoners, on the average, have slightly higher levels of education than other Canadians do. A higher percentage has a grade nine minimum education (a measure of literacy) and the same is true for university degrees.

When the Yukon population is analyzed as one group, the figures, other than for unemployment, look good when compared to those for the rest of Canada. These figures do, however, hide substantial differences which need to be addressed.

When the figures are further explored using recent income, education and employment data from the 1996 Canadian census it becomes apparent that there are substantial differences in the Yukon. The Yukon has higher average incomes but also has much higher rates of low income based on Statistics Canada methodology. In 1995, 24.9% of Yukoners fell below the low income measure; however differing lifestyles and taxation requirements make direct comparisons between the Yukon and Canada difficult. The number was 12.7% for the rest of Canada. Whitehorse average income was $50,882 as compared to $38,179 in the rest of the Yukon.

There are striking differences in income, education and employment in the communities when compared to each other and to the Yukon average, which is dominated by Whitehorse. This is detailed in various graphs and charts in the chapter.

Socioeconomic status, as assessed by levels of income, education and employment, is closely related to health status across the spectrum. Population groups on the lower rungs are less healthy than those further up. The exaggerated gap between the best off and worst off in the Yukon should concern all Yukoners especially those in a position to make policy decisions.

CHAPTER 4: MORTALITY

Many of the data pieces here are of doubtful significance because of the small numbers involved. What does seem clear is that the life expectancy of Yukoners, men and women, is about 10% lower than for Canadians as a whole. Age specific death rates, while statistically problematic if a single age group is selected, confirm this if the trend is examined.

It is clear that the Yukon has high death rates related to trauma and accidents. In looking at potential years of life lost (PYLL), the Yukon loses a high proportion through accidents, including suicide, traffic accidents and interpersonal violence. Alcohol is clearly a significant feature here but the data are incomplete.

There are no alarm bells for other causes of death such as cancer. As far as can be judged from sometimes-small figures, Yukon rates for other causes of death fit the national pattern.

Life expectancy is a useful but blunt measure of health status. By this measure there is a problem in the Yukon. Trauma deaths are a factor but probably do not provide the whole answer. Another question here is does this phenomenon apply equally to all Yukoners or is there a segment of our population dying much younger and skewing the averages?

CHAPTER 5: BIRTHS AND THERAPUETIC ABORTIONS

The Yukon birth rate is declining slowly, i.e., women of child bearing age (15-49) are having fewer children. For this reason and because, through population aging, there is a smaller proportion of the population in this age group, there are now fewer babies born in the Yukon each year. From a high of almost 600 in 1991 the number has decreased to about 400 (personal communications, Ed.) in 1998.

The Yukon has higher teenage birth rates than the rest of Canada but the numbers are converging and may have done so already if this trend holds up.

The Yukon therapeutic abortion rate, highest in the 20 to 24 age group, is somewhat higher than in the rest of Canada. This probably has to do with access as much as with an absolute difference in unwanted pregnancies.

The decreasing birth rate, a component of population aging, has implications for a shift in resources from younger to older age groups. Health and education planners will need to factor this rather dramatic shift into their future considerations.

CHAPTER 6: INJURY HOSPITALIZATION DATA

The data in this chapter is from the Whitehorse General Hospital only. While this would cover the vast majority of major injuries some will be missed through admission in other communities and direct evacuation to southern centers.

The Yukon has higher hospital admission rates for all categories of injuries than the national rate and higher rates than all provinces but the NWT. The highest rate was for falls by the elderly; also the highest in the rest of Canada. Except for falls in the elderly (F = 2.5:1) and traffic accidents in the 16-24 age group (M=F), males vastly outnumber females in injury admissions.

Injuries are a major cause of death (Chapter 4) and hospital admission. While the rates may be decreasing they are still much higher than in the rest of Canada. This area needs better definition and much more aggressive action. A good first step would be the establishment of a trauma registry to better define and follow the trends. This would help in the planning and implementation of interventions.

CHAPTER 7: CANCER INCIDENCE AND MORTALITY

Although all the figures are faithfully presented, from a statistical point of view there are no cancers common enough in the general population to allow the drawing of conclusions in a population as small as we have in the Yukon.

The figures suggest that most cancers are somewhat less common in the Yukon than in Canada. This has no statistical significance.

For practical purposes, we cannot study cancer rates directly in our small population. The problem of trying to address cancer rates in individual communities is even more serious for the same reasons. What we can do is to study risk factors, smoking and exposure to other toxins in particular, which we know will translate into higher or lower rates of cancer. A review of prevention and screening programs for effectiveness and efficiency is also necessary.

CHAPTER 8: REPRODUCTIVE HEALTH

This is a new chapter this year and provides a solid baseline for reproductive health data and initiatives in the future.

The chapter further explores pregnancy rates and compares them by age group and rural/Whitehorse. Again the decline in the higher teen pregnancy rate is demonstrated.

Yukon has much higher than national reported rates of chlamydia infection. This sexually transmitted disease (STD) is a good measure of other STDs and is a serious cause of concern. Absolute numbers are undoubtedly high but there may also be the factor of more aggressive case finding, in a disease that is often without symptoms, in the Yukon than elsewhere.

Rural rates are higher than Whitehorse rates, sometimes up to twice as high.

High teen pregnancy, abortion and STD rates suggest that much can be gained by initiatives addressed particularly at those under 30. These figures are some of the few that distinguish between Whitehorse and rural areas and suggest that there may be special problems in rural Yukon. For STDs etc. as well as for other health problems, better definition and more aggressive intervention seems warranted.

CHAPTER 9: COMMUNICABLE DISEASES

The only unusual blip in the pattern of infectious diseases in the Yukon was the sporadic occurrence of influenza A, typically a winter disease, in the summer of 1997. Surveillance continues. The other outstanding feature here is again the high rate of sexually transmitted diseases as discussed in Chapter 8.

While vaccination rates are falling a little, vaccine coverage in the Yukon remains good. However, there is a concern about increasing resistance to vaccination by those who have forgotten the devastation of the pre-vaccination days.

The Yukon, through Yukon Communicable Disease Control (YCDC), is in touch with all the issues around emerging infectious diseases and the concern these cause.

The figures for STDs come from Yukon Communicable Disease Control Unit (YCDC) and comments need not be repeated. The YCDC maintains a Yukon-wide surveillance system for infectious diseases as well as supervising TB control and providing treatment and expertise to Yukoners under the auspices of the Medical Officer of Health.

2.2 WHAT IS NEXT?

The 1994 Yukon Health Status Report dealt, in some detail, with mental health, disability, other health and wellness indicators and lifestyle risk factors. That information was obtained mainly from the 1993 Yukon Health Promotion Survey and the 1990 Canadian Health Promotion Survey. Further survey information is not available for this report but should become so within the next year. It will probably be the basis for an interim report.

It is clear from this report that there are data gaps and the way in which we gather and collate data will be reviewed to make it more useful and relevant. One of the difficulties is that much of the surveillance and other data is now kept manually. It is a matter of some priority that proper computer-based systems be developed. Health status reporting should be a live, ongoing affair rather than an occasional wake-up blip.

CHAPTER 3:
THE SOCIAL AND ECONOMIC CONTEXT

3.1 THE POPULATION

Until 1997 the Yukon's population grew steadily. The population increase from 1981 to 1996 was well above the Canadian figure at 3.3% per year. The 1997-8 trend shows a decrease for the first time. The Yukon Health Insurance Plan registration data shows a drop of about 1,100 people for 1997-98. When lag in the system is accounted for, the decline in population may well be larger than this. The Yukon Bureau of Statistics and Statistics Canada differ somewhat on population figures. The Yukon Bureau of Statistics uses health registration data and estimates a population of 32,400. Statistics Canada estimates 31,600 for 1998.

The 1996 Census shows that the Yukon's population continues to be relatively young compared to Canada as a whole. Comparison of Yukon and Canada population pyramids in Figure 3.1 shows that the Yukon's population is still younger than Canada's population but the bulge is moving up and the populations can be expected to have roughly the same population age distribution if present trends continue.

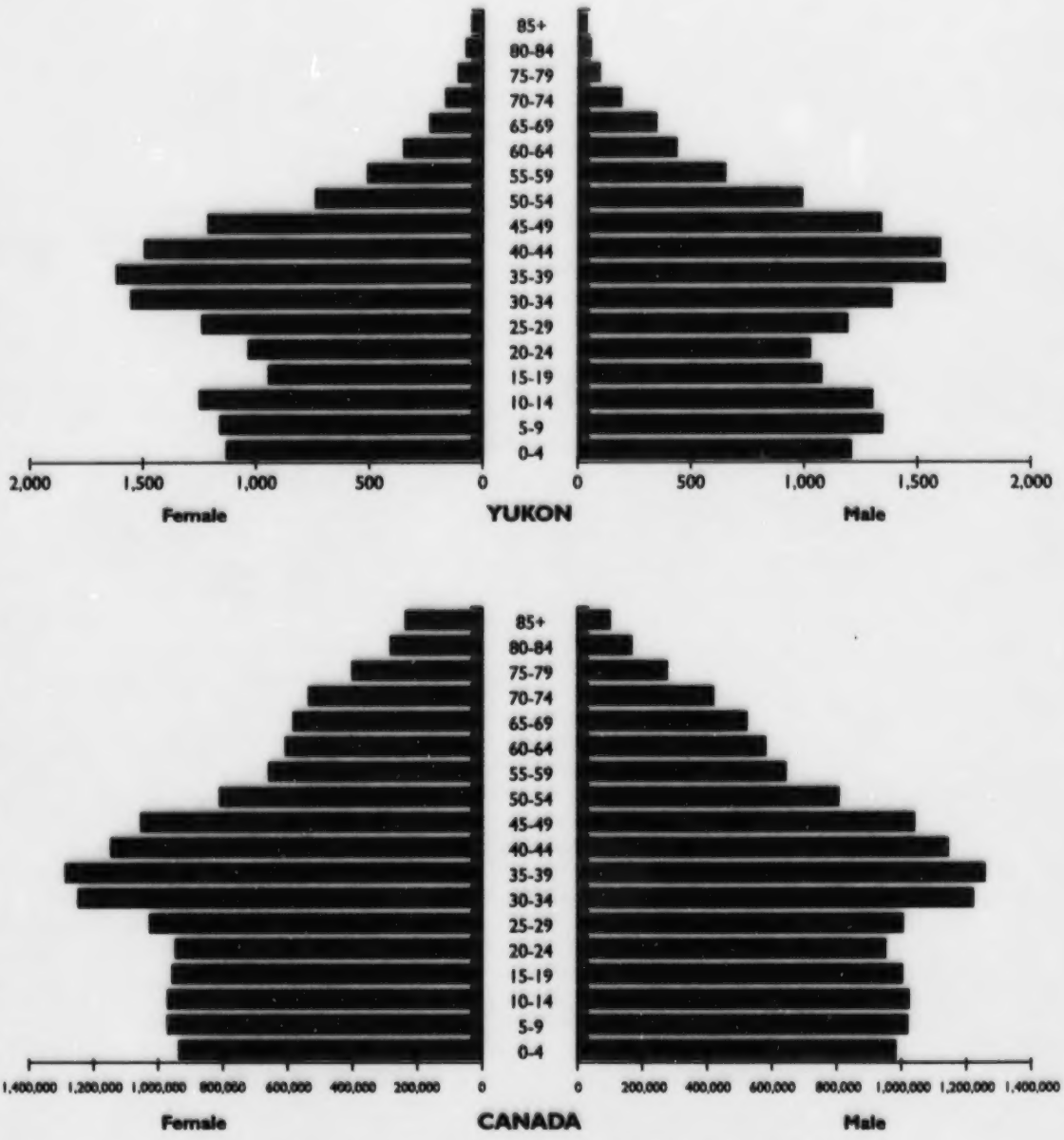
Factors contributing to this growth in the older age groups may be increasing life expectancy, less out-migration of elders and in-migration of older relatives of Yukoners. The Yukon now offers significantly better health care coverage and other facilities for elders than other provinces. The aging of the Yukon population will result in a gradual increase in chronic diseases with an accompanying increase in the financial burden of these diseases. This in turn will gradually create a greater demand for health care and elder care in the Yukon. Pressure for services will increase across the spectrum from community-based care and assistance programs through chronic care facilities to intensive medical care.

Population gender distribution in the Yukon has remained relatively stable over the past few years and is at 47% female and 53% male in 1998. This compares with a Canadian distribution in 1998 of 50.5% female and 49.5% male. The 1996 Census determined that people with self-identified Aboriginal origins make up 20.1% of the Yukon's population, compared with 2.8% of the population of Canada. (Yukon Bureau of Statistics # C96-07)

Family size in the Yukon matches that of Canada, with the average number of persons per 1996 Census family at 3.1. The average number of children per census family is 1.2 in the Yukon and in Canada. This differs from other northern regions of Canada, where family size tends to be significantly larger than the Canadian average.

While recent trends point to an aging population, it should be kept in mind that migration to and from the Yukon, driven primarily by changing economic opportunities, will remain a key factor in both the future size and age structure of the population.

Figure 3.1



Population pyramids for Yukon and Canada. Statistics Canada 1996.

3.2 EDUCATION, EMPLOYMENT AND INCOME

Education, employment and income are all closely linked to health status. The first health status report noted that epidemiological research demonstrates a positive relationship between level of education and health status — people with higher levels of education tend to enjoy better health. Similarly, there is a strong positive association between income and health status. Of the two, income is the more reliable indicator of health: the higher a person's income, the more likely that person is in good health.

The 1996 Census shows that 5.6% (7.3% in 1991) of Yukoners had less than grade nine education, compared to 12% (14.3% in 1991) of Canadians. A grade nine education is a proxy measure of literacy adequate for full participation in the life of the community. At the other end of the spectrum, the census also shows that 14.5% (12.5% in 1991) of Yukoners have a university degree, compared to 13.2% (11.4% in 1991) of Canadians.

In 1995, the average Yukon family income was $61,807 ($63,928 in 1992) ("family" in this case means a related group of individuals sharing a common dwelling). This is 13% (19% in 1992) higher than the Canadian 1995 average family income of $54,583 ($53,676 in 1992). Average household expenses are 23.7% higher in the Yukon than in Canada (Statistics Canada 1998). The 1995 Yukon average income for lone-parent families was $26,924 ($24,152 in 1992), compared to $69,190 ($74,242 in 1992) for two-parent families. The 1995 median or mid-point family income in the Yukon was $55,695 ($58,337 in 1992). These figures are in actual, uncorrected dollars.

Compared to the other provinces and territories the Yukon has a greater concentration of incomes at the extremes of the income range. This is reflected in the fact that the Yukon has both higher average income, and higher rates of low income, relative to southern Canada. For purposes of comparison, "low income" as used here is defined as 50% or less of the median family income, adjusted to take into consideration family size and composition. (Statistics Canada)

In 1995, 24.9% (22% in 1992) of Yukoners (including unattached individuals and people in families) were in the low income category, compared to 12.7% of Canadians. The incidence of low income was highest among lone-parent families with children under 18 years of age, most of which are lead by women. 53.2% (56.3% in 1992) of the Yukon's lone-parent families have total income below the low income measure. There was also a substantial difference between Whitehorse and the rest of the Yukon. In 1995, the average Whitehorse income was $50,882 compared to $38,179 elsewhere in the Yukon. 35.7% of earners in Whitehorse were below the Low Income Measure (Statistics Canada) compared to 21% elsewhere in the Yukon. This will be further explored in section 3.3.

In 1995, the average income for Yukon males was $30,419 ($33,039 in 1991) and for Yukon females it was $28,944 ($22,930 in 1991). This means that in 1995, Yukon females, on average, earned 95% (69% in 1991) of what Yukon males earned. In comparison, the average income for Canadian males in 1991 was $25,400 ($30,956 in 1991) and for Canadian females the average income was $14,600 ($17,890 in 1991). This means that Canadian females were earning on average about 57% (58% in 1991) of what Canadian males were earning. (Source: Statistics Canada, Labour Force Income Profile 1991 and 1995). This indicates that the income difference between men and women in the Yukon is much less pronounced than in Canada and is decreasing rapidly. When adjusted for marital status and age, the difference almost disappears. (Yukon Bureau of Statistics)

The Yukon labour force continues to show a high rate of female participation. The Yukon male labour force participation rate is 82.8%, and the female rate is 77.3%. This compares to the Canadian participation rate of 72.5% of males and 57.4% of females.

High rates of participation in the labour force, given that family composition in the Yukon does not differ from the national picture, suggest that the quality and availability of childcare may be an issue that should be monitored.

The 1997 (12 month average) unadjusted unemployment rate for the Yukon was 13.3% and for Canada it was 9.2%. In 1996, the Yukon rate was 9.6% and the Canadian rate was 9.7%. The jump in the Yukon unemployment rate, which appears to be continuing in 1998, is due in large measure to the closing of the mine in Faro. The Yukon unemployment rate fluctuates annually and seasonally more than for Canada as a whole, with higher employment in the summer months and lower employment in the winter months.

3.3 SOCIAL AND ECONOMIC DISPARITY IN THE YUKON

As has already been mentioned, the most useful indicator of health is wealth. Better socioeconomic status results in more disposable income, improved access to services (even those provided free of charge), better education, better nutrition and an ability to make life choices unencumbered by necessity. Improvement in socioeconomic status, more than any other single factor, results directly in the improvement in health status. It is this idea that has encouraged governments at all levels to embrace the concepts of Healthy Communities and Healthy Social Policy. As a result of this approach, investment in infrastructure or in facilities that, at first glance, seem to have little to do with health may significantly improve health status. If there is a clear understanding of which groups in society are disadvantaged, policy decisions can be formulated taking this information into account. To understand socioeconomic disparity certain minimum information is needed. The most useful indicators are those describing income, education and employment.

When whole population average figures are used, the Yukon compares very well with the rest of Canada. Though the gap is narrowing, the average income of those working is higher. Educational standards are marginally higher. Participation in the workforce is high. Unemployment is the only major indicator that is worse than the national average. Despite this, the percentage of those with incomes below the Low Income Measure is substantially higher in the Yukon. As mentioned in Chapter 3, this suggests a greater disparity than the national average between the rich and the poor in the Yukon. The 1994 Yukon Health Status Report suggested that more information was needed to explain this and to identify the most disadvantaged groups.

The 1996 Census, through its Statistical Profiles, provides the information needed for all communities in the Yukon (Appendix 1). These data clearly show the striking differences in incomes, education and employment among Yukon communities. At the time of this report the mine in Faro was closed with no early hope of it re-opening. While the statistics for Faro do not reflect the situation today, they do serve a useful purpose as a baseline for 1996 activity. The gaps and zeros represent figures that Statistics Canada suppressed because of the small numbers.

Figure 3.2 shows the income per person when the total declared income is divided by the total population of each community. While this figure is not commonly used it is useful to assess community wealth and hence community health status. It is obvious that there is an extreme spread ranging from $17,611 in Whitehorse to $7,147 in Old Crow. While these figures no doubt reflect the difference in dependence on subsistence hunting and fishing and housing costs, this would account for only a part of this difference.

Figure 3.2

Average income of those working. Statistics Canada 1996.

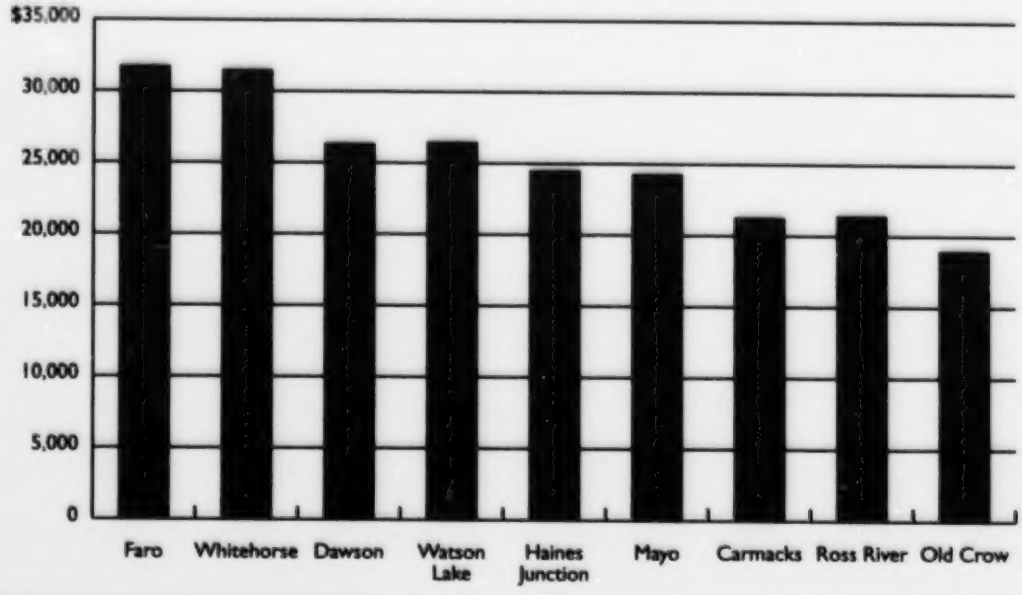


Figure 3.3

Percentage unemployed. Statistics Canada 1996.

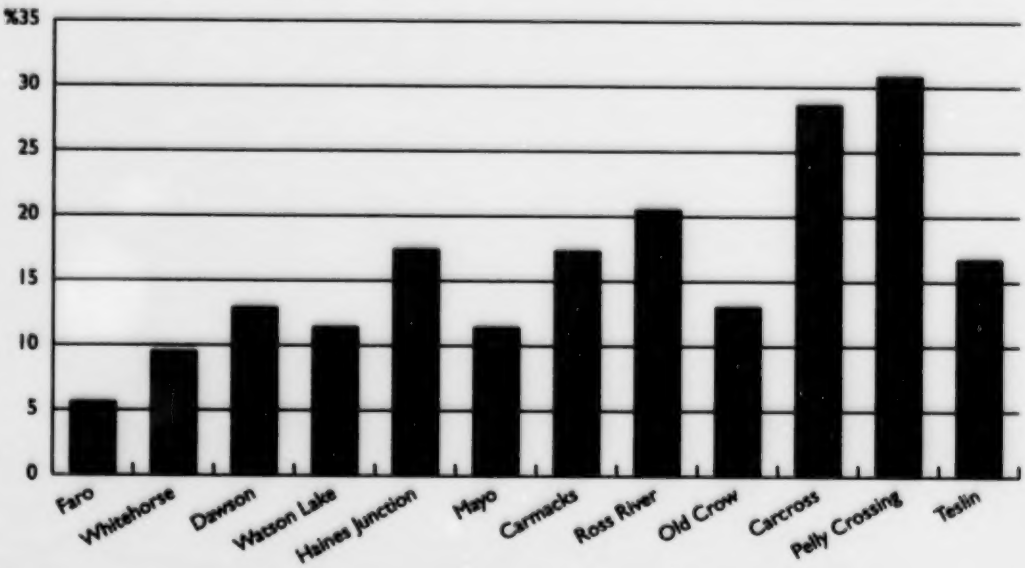


Figure 3.3 again shows quite clearly that even among those earning income there is a difference of 30% in the average income between those in Whitehorse and Old Crow, with other communities falling somewhere in between.

Figure 3.4 shows the wide difference in unemployment rates ranging from 5% in Faro and 9.5% in Whitehorse in 1996 to 30.8% in Pelly Crossing and 28.6 % in Carcross. If the lower participation rates in the labour force are taken into account the differences are even more striking.

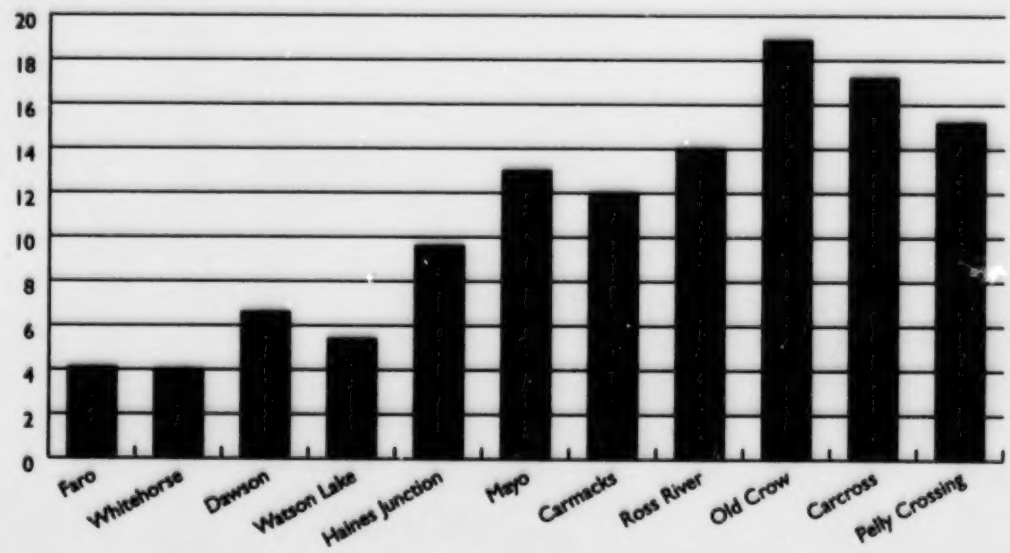
Figure 3.5 shows the variation in rates of those adults with less than a grade nine education. As mentioned above, grade nine education is commonly used as a measure of literacy. There is a significant percentage of those who do claim a grade nine education in Canada and still test at poor literacy levels so this benchmark is a conservative one. The figures here speak for themselves.

In summary, away from the larger communities in the Yukon, there is a low literacy rate, high unemployment, low average income and low income per capita. From the percentage of those who earn less than the Low Income Measure in Whitehorse it can probably be deduced that Whitehorse is a microcosm of the Yukon. There is likely a large gap between the richest and the poorest in Whitehorse but present data do not allow this to be quantified.

Since the public health literature overwhelmingly demonstrates a relationship between lower socioeconomic status and poor health status this picture should raise alarm bells. While there are scattered Yukon data to support this in the Yukon, more specific data needs to be collected.

Figure 3.4

Percentage of adult population with less than Grade 9 education. Statistics Canada 1996.



3.4 SUMMARY

The Yukon population is aging rapidly and is approaching the same age composition as the Canadian population.

The population declined between 1961 and 1966 Census and more recently between 1993 and 1994.

The average income in the Yukon is higher than the Canadian average but the gap is closing.

A higher percentage of Yukoners fall below the Low Income Measure than in Canada. This means that there is a bigger gap between rich and poor than in Canada.

Unemployment is higher in the Yukon than in Canada and is increasing.

A large part of the poorer population in the Yukon lives in the communities. This population has less income, more unemployment and lower educational attainment levels.

Chapter 3: The Social and Economic Context

Data and Research Questions:

- Can legitimate indicators for all aspects of health, as defined by the Yukon *Health Act*, be developed?
- How can the health status of the lower socioeconomic strata, which is over- represented in the Yukon, be more accurately determined?
- What are the risks for children raised in persistent poor socioeconomic circumstances?
- What are the determinants of the wider than national average spread between better and less well off Yukoners?
- What indicators best assess risk in the older segments of our population?

Priority for Action:

- In the face of increasing unemployment and lower relative incomes, the increasing risk burden for those in the lower socioeconomic strata in the Yukon should be reviewed.
- The demands on health and social services of an aging population must be met.
- Indicators to better monitor aspects of health and assess programs should be pursued within the Yukon and jointly with the Canadian Institute for Health Information.

CHAPTER 4: MORTALITY

CAUTION! The statistics and comparisons in this section should be interpreted with caution or not at all. When there are few events, as for example with infant mortality, in a small population such as that in the Yukon, a single event more (or less) can represent a large percentage increase or decrease. These big fluctuations from one period of time to the next are known as "volatility" and mean very little. Unless this is understood the figures that follow are open to serious misinterpretation.

They are reported because some information, properly used, is better than none at all.

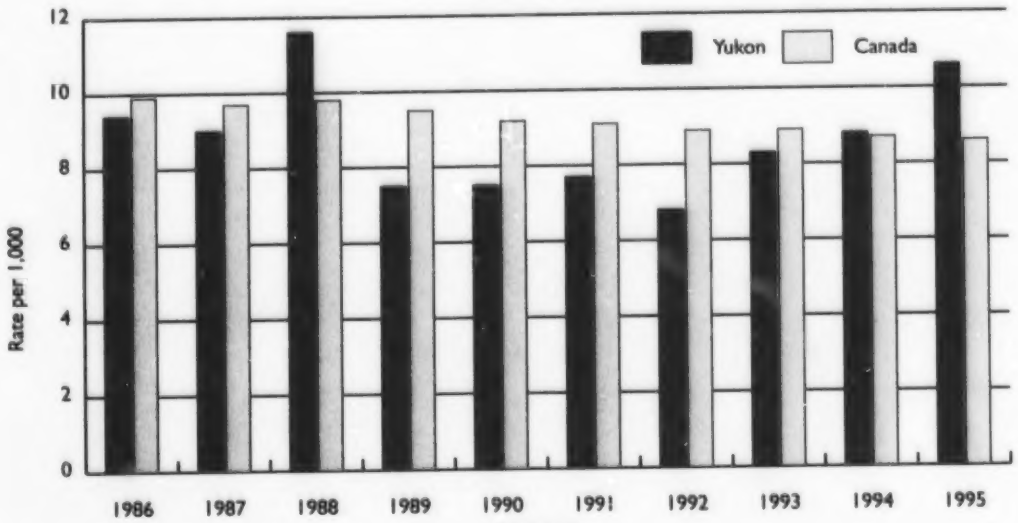
4.1 INTRODUCTION

In a stable society, with every person living to 80 years of age and no population increase, the annual number of births and deaths would be the same.

In today's population, and for the near future at least, the birth rate varies year by year. Women of different ages may have different birth rates. The death rate varies by age group and tends to be higher in the older age groups. As societies become more educated, birth rates tend to decrease. Death rates in the younger age groups, which tend to be preventable, become much lower and can approach zero. Deaths will occur only in the elderly age groups. This phenomenon is known as "mortality compression". Mortality compression results in longer life expectancy. Conversely, the higher the life expectancy in a given population, the more mortality compression has taken place. Life expectancy is therefore a measure of how successful a population has been in preventing younger deaths.

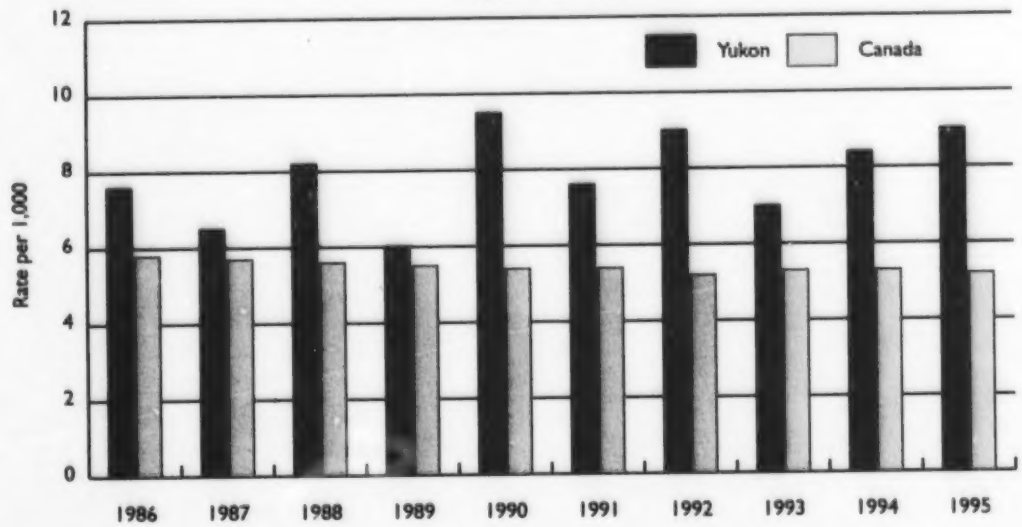
Higher health status is reflected in lower birth rates, lower death rates in the younger age groups, and higher life expectancy. After wealth and its distribution in a population, the figures on death rates, birth rates and life expectancy say more about the health of a population than any others. For this reason they are presented early in this report.

Figure 4.1 (a)
Standardized Death Rates



MALE
Canada and Yukon, 1986 to 1995

Figure 4.1 (b)



FEMALE
Canada and Yukon, 1986 to 1995

Source: Statistics Canada: Births and Deaths (data standardized to the 1991 Cdn population)
Yukon Bureau of Statistics: Yukon Health Care Population estimates, Vital Statistics Deaths database.

4.2 DEATH RATES

4.2.1 STANDARDIZED DEATH RATES

The standardized death rate represents the number of deaths per 1000 population per year that would occur in the Yukon as compared to Canada, if the Yukon's age distribution were the same as Canada's. By standardizing the two populations for age, we can see differences in death rates between the two populations that are the result of something other than differences in age distribution.

The standardized Yukon death rate shows substantial variation from year to year for males and, in particular, for females (see Figure 4.1). Since the Canadian death rate remains fairly stable from year to year, the Yukon fluctuations are probably due to statistical volatility related to small Yukon numbers. (see CAUTION!)

The standardized death rate for Yukon males varies between 1986-1995, from a high of 11.6 per 1000 males in 1988 to a low of 6.8 per 1000 males in 1992. The Canadian death rates for males over the same period have gradually fallen from 10 per 1000 males in 1986 to approximately 8 per 1000 males in 1995. The average for Yukon males over the six years (1991-1996) is 8.6. This is slightly higher than the Canadian average.

The standardized death rate for Yukon females from 1986-1995 varied from a high of 9.5 per 1,000 females in 1990 and a low of 6 per 1,000 females in 1989. The Canadian death rate for females from 1986 to 1995 varied slightly around 6.5 per 1000 females. The average rate for Yukon females over the six years (1991-1996) is 7.6. This is higher than the Canadian average and may be significant.

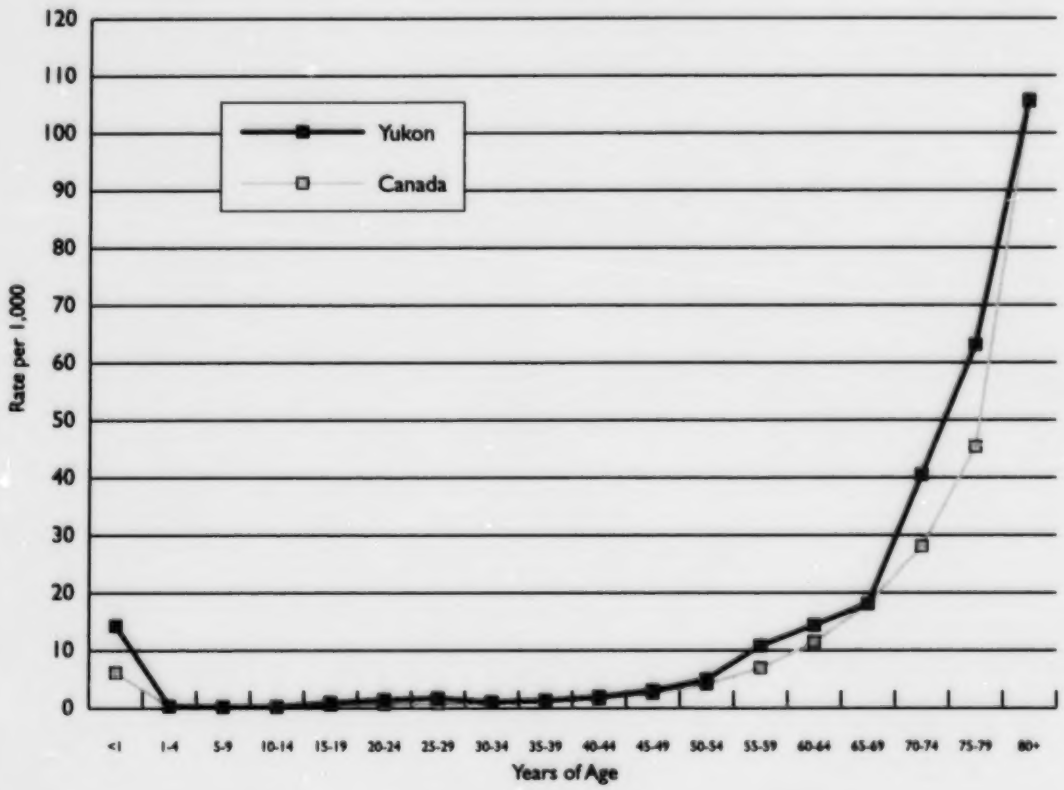
It does seem that the standardized death rate for males and females in the Yukon is marginally higher than would be expected when compared with that in Canada. While it is possible that this is due to statistical error because of the small numbers, the use of a six year average makes this less likely. Assuming that the difference is real suggests that the Yukon population, or at least a significant subset of that population, has a higher than expected death rate. Possible explanations will be explored later in this report.

4.2.2 AGE-SPECIFIC DEATH RATES

Age-specific death rates enable a mortality curve to be drawn as in Figure 4.2. Mortality curves allow a quick visual comparison between populations. With maximal mortality compression, i.e., in the ideal population where every person lives to 80 and then dies, this curve should be a flat line to age 80 and then a vertical line rather than a curve.

Figure 4.2

5 Year Average Age-Specific Death Rates, Canada and Yukon, Total 1991 to 1995



Source: Statistics Canada: Births and Deaths 1995
Yukon Bureau of Statistics: Yukon Health Care Population estimates, Vital Statistics Deaths database.

Age-specific death rates show death rates in each five year age group. These death rates are normally expressed as a number per 1000 in that age group. Yukon figures are too small to do a year-by-year analysis so the rates were averaged over five years. While caution is needed to interpret these figures they do agree with the slightly higher standardized mortality rates seen in section 5.1.

The average age-specific Yukon death rates for 1991 to 1995 are much higher for infants and for those over 65 than the Canadian rates. For the ages between these there is a slight but persistent increase over the Canadian figure in each age group. While the comparison is between a five year average for the Yukon and a one year figure for Canada, such a comparison is valid as the Canadian rate does not vary significantly over a five year period.

These higher age specific death rates in the Yukon are probably real rather than representing statistical error.

4.2.3 INFANT MORTALITY AND PERINATAL MORTALITY

Table 4.1 INFANT MORTALITY Canada and Yukon 1991 to 1995

	1991		1992		1993		1994		1995	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Live Births[1]										
Canada		14.3		14.0		13.4		13.2		12.8
Yukon	568	19.5	529	17.5	508	16.7	442	14.9	470	15.5
Abortions[2]										
Canada		17.5		17.7		18.7		18.6		18.7
Yukon	147	25.9	150	28.4	165	32.5	140	31.2	130	28.2
Infant Deaths [4]										
Canada		6.4		6.1		6.3		6.3		6.1
Yukon	6	10.6	2	3.8	4	7.9	2	2.3	6	12.8
Neonatal Deaths [4]										
Canada		4.1		4.0		4.2		4.2		4.2
Yukon	5	8.8	1	1.9	3	5.9	2	2.3	2	4.3
Perinatal Deaths[3]										
Canada		6.8		7.1		7.3		7.2		7.0
Yukon	6	10.5	3	5.6	6	11.8	2	4.5	4	8.5
Stillbirths (20+ weeks)										
Canada		5.7		6.3		6.0		6.0		6.2
Yukon	1	1.8	3	5.7	4	7.9	1	2.3	3	6.4

Source: Statistics Canada, Births and Deaths
Note: Only the rates for Canada are shown, since this provides the most useful information

1 Rates per 1,000 population
2 Rates per 100 livebirths
3 Rates per 1,000 livebirths and still births of at least 28 weeks gestation
4 Rates per 1,000 livebirths

Live birth rate: (number of live births per 1000 population.)
There has been a steady decrease in birth rate from 19.5 in 1991 to 15.5 in 1995. Since the fertility rate (births per 1000 women in the reproductive age group, 15 - 49) has changed little and is close to the Canadian figure, this reflects an aging Yukon population.

Abortion rate: (number of abortions per 100 live births.)
The Yukon figure is consistently higher than the Canadian figure and probably reflects access to services and, to some extent, the higher teen pregnancy rates in the Yukon.

Infant mortality rate: (deaths between birth and one year in age per 1000 live births.)
Infant mortality is a measure of the conditions under which children live and are cared for. Nothing can be said of these infant mortality figures. There are too few infant deaths to develop a statistically meaningful conclusion.

Perinatal mortality rate: (deaths between 20 weeks gestation and seven days of age per 1000 births including stillbirths). Perinatal mortality reflects the health of the pregnant mother and the level of care available during her pregnancy and delivery and immediately post partum. These figures are also too small to allow conclusions to be drawn.

Neonatal mortality rate: (death between birth and 28 days per 1000 live births.) In a developed country this figure is a measure of death from congenital illness or abnormality. Such infants may live for longer than seven days but die not long after. No conclusions can be drawn from Yukon figures.

Unfortunately the Yukon figures for death between 20 weeks gestation and one year of age are of little use. Even trends cannot be established with any accuracy. In these circumstances the most useful methods of monitoring these deaths and planning prevention is through the detailed review of each individual death. At present this is done through a Whitehorse General Hospital committee. Some deaths after seven days of age may be missed as the committee reviews mainly maternal and perinatal mortality.

4.3 LOW BIRTHWEIGHT

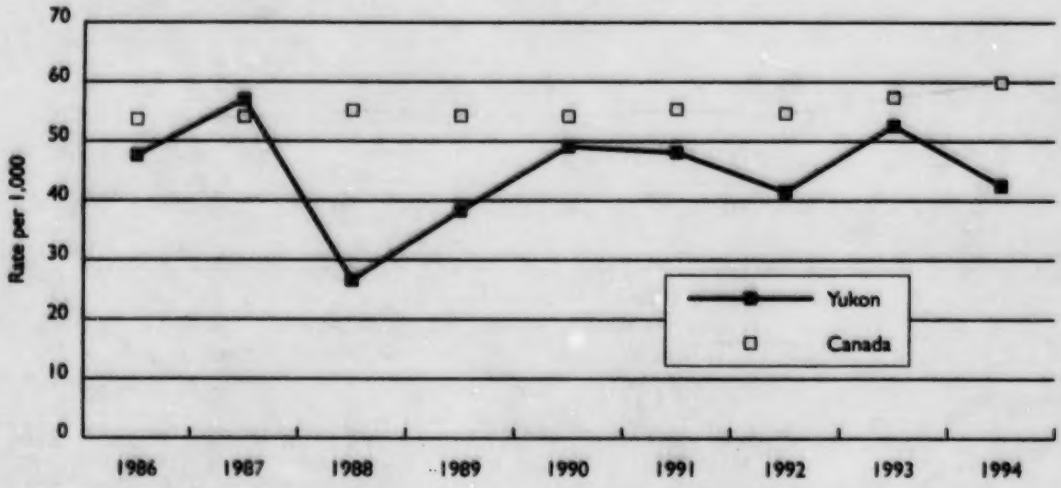
Low birthweight: live birth weighing less than 2500 grams (5.5 pounds).

Low birthweight is a measure of maternal health during pregnancy and is affected by prematurity, multiple births, maternal illness, nutrition, smoking and other factors.

While Yukon figures appear to be better than the Canadian average this may be due to small numbers. It may also be due to the inconsistent inclusion, or otherwise, of high risk pregnancies sent out of territory for delivery.

Figure 4.3

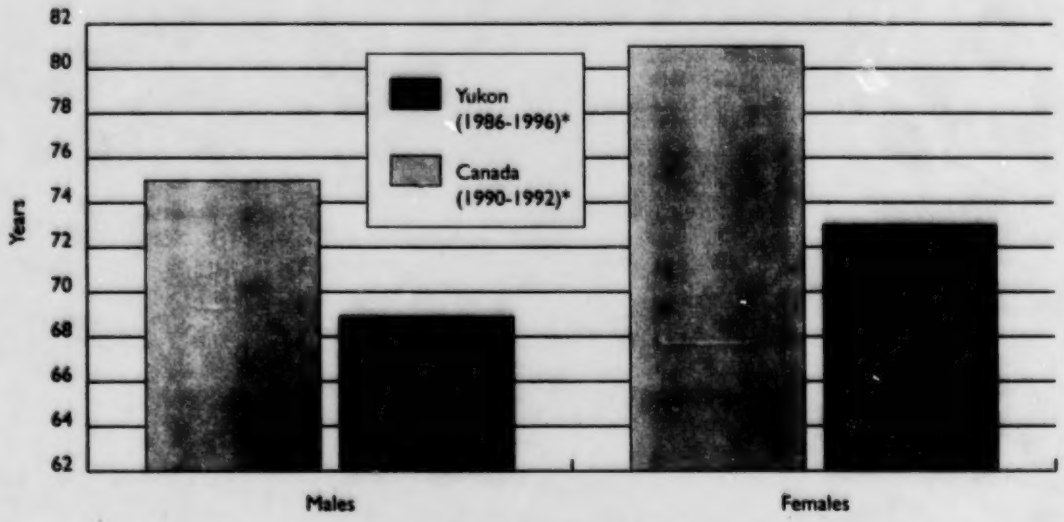
Low Birthweight Rate, Canada and Yukon, Total 1986 to 1994



Source: Statistics Canada: Births and Deaths 1995, Health Indicators 1997
Yukon Bureau of Statistics: Vital Statistics Births database.
Notes: Low birthweight rate (LBW) is calculated by dividing the number of low birthweight infants by the total number of live births. Rate is per 1,000 population.

4.4 LIFE EXPECTANCY

Figure 4.4
Life Expectancy from Birth, by Gender, Canada and Yukon.



Source: Statistics Canada: Health Indicators 1997
Yukon Bureau of Statistics: Vital Statistics Deaths database, Life Tables.

Life expectancy: a measurement of the average age an individual can expect to reach given the current probability of dying at each age. This is calculated using a life table (see Figure 4.) based on Yukon death rates in each age group. Used alone, this figure is a good indicator of the health status of a population.

The most recently available data on life expectancy in Canada are for 1990-1992. Yukon figures are from 1986 to 1996 (see Figure 4.4 and Table 4). The 10 year Yukon average was compared to the Canada 1990-1992 figure. The years covered for Canada and the Yukon are not the same. However, since the Canada figure covers a time period in the middle of the Yukon averaged years, the comparison will be valid.

Women in the developed world have about a 10% longer life expectancy than men. This is true for the Yukon and for Canada as a whole. However, both Yukon men and women are expected to live about 10% less than would be expected using the Canadian figures.

The life expectancy figures from this report and those of the 1994 Health Status Report cannot be compared. For this report, 10 years of Yukon data were used whereas the previous report used only four years of data. More recent national statistics were also available for comparison in this report.

There does seem to be a trend towards older age groups having a greater difference in years of life remaining when compared to Canada. While these figures are small, especially when desegregated by sex and age group (particularly for women), the general conclusion that life expectancy in the Yukon is lower than expected when compared to Canadian figures is probably true. That this fits with the observations of standardized and age-specific death rates in sections 5.1.1 and 5.1.2 is due to the fact that all these figures are generated from the same data.

Table 4.2 LIFE EXPECTANCY By Age & Gender Yukon and Canada

	YUKON (1986 to 1996)*		CANADA (1990-1992)*		% Difference Between Yukon & Canada	
AGE	Male	Female	Male	Female	Male	Female
<1	68.94	73.0	74.61	80.97	7.6	9.8
1-4	68.94	72.94	74.15	80.44	7.0	9.3
5-9	65.13	69.15	70.25	76.53	7.3	9.6
10-14	60.20	64.25	65.32	71.59	7.8	10.2
15-19	55.33	59.30	60.40	66.65	8.4	11.0
20-24	50.80	54.46	55.66	61.76	8.7	11.8
25-29	46.63	49.64	50.97	56.87	8.5	12.7
30-34	42.06	44.89	46.25	51.98	9.0	13.6
35-39	37.39	40.02	41.53	47.11	10.0	15.0
40-44	32.76	35.20	36.86	42.29	11.1	16.7
45-49	28.13	30.46	32.22	37.53	14.5	18.8
50-54	23.68	25.72	27.72	32.89	14.6	21.8
55-59	19.31	21.23	23.43	28.39	17.6	25.2
60-64	15.35	16.74	19.43	24.08	21.0	30.5
65-69	11.52	12.57	15.80	19.98	27.0	37.1
70-74	7.62	8.42	12.55	16.13	39.3	47.8
75+	4.06	4.28	6.72	8.54	39.6	50.0

Source: Statistics Canada, Health Indicators 1997
Yukon Bureau of Statistics: Vital Statistics Deaths Database, Life Tables

Notes: Life expectancy is a measurement of the amount of time an individual can expect to live given the current probability of dying at each age. The years covered for Canada and the Yukon vary. A minimum of ten years of data for the Yukon was needed since the annual number of deaths is so small (especially when calculated by age group) that estimates of life expectancy based on less than ten years of data could be unreliable. Only two years of Canadian data was used as the number changes very little from year to year and is a useful comparison even though it was examined over a shorter period than the Yukon number.

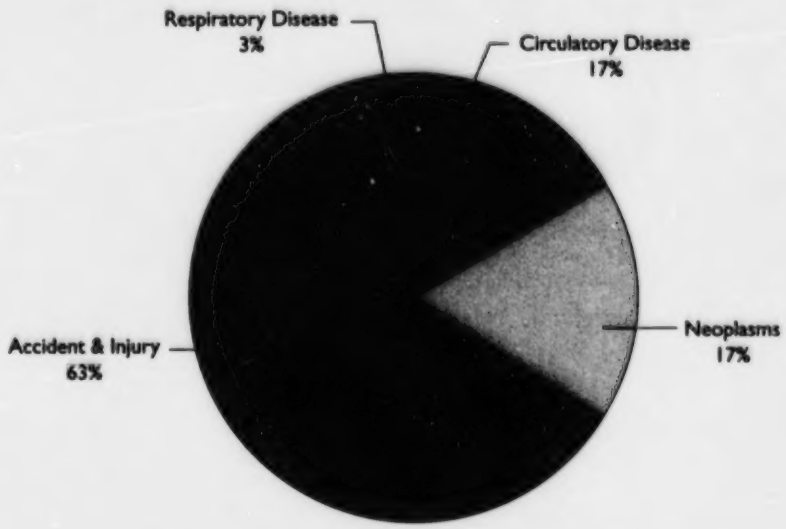
4.5 POTENTIAL YEARS OF LIFE LOST (PYLL)

Potential years of life lost (PYLL): when a death occurs before an individual reaches life expectancy age, the years between age of death and life expectancy age are considered as potential years of life lost. This measure is useful as it allows comparison of causes of death in terms of years of life lost. Illnesses or accidents that kill young people obviously result in more PYLL than those that occur in older people.

The following data looks at PYLL for the Yukon over the period 1986 to 1996 (see Figures 4.5 and 4.6). A minimum of 10 years of data for the Yukon was needed since the annual number of deaths is so small (especially when desegregated by age, sex and cause of death) that PYLL calculation based on less than 10 years of data could be unreliable.

Figure 4.5

Potential Years of Life Lost - by Major Cause (Total) Yukon, 1986 to 1996



Source: Yukon Bureau of Statistics, Vital Statistics Deaths database.

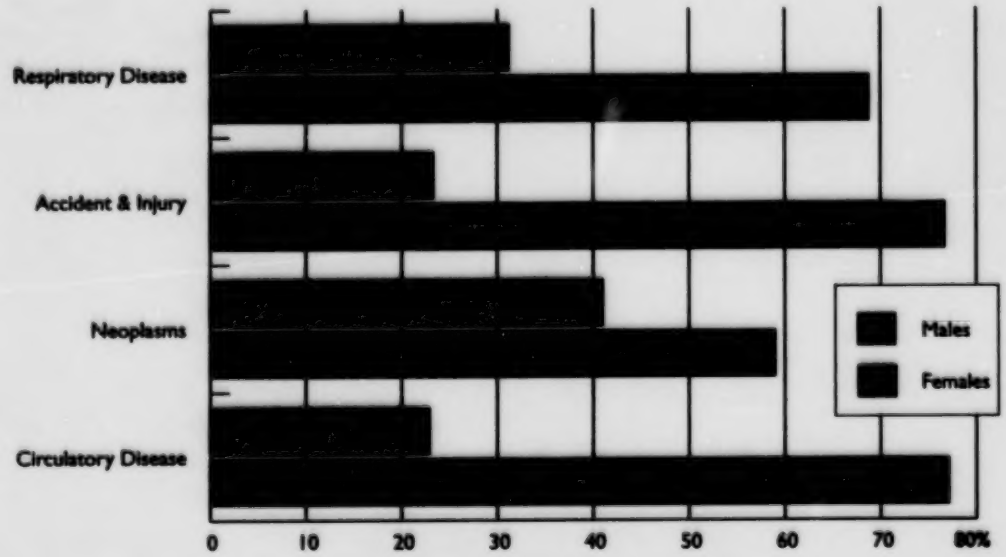
Notes: Potential years of life lost is calculated by taking the median age in each age group, subtracting from age 75, and multiplying by the number of deaths in that age group disaggregated by sex and cause of death.

Deaths due to accident and injury account for 63% of PYLL in the Yukon from 1986 to 1996 (see Figure 4.5). Neoplasms (cancer) and circulatory disease each account for 17% of PYLL followed by respiratory disease at 3% of PYLL during that time period.

Neoplasms, circulatory disease and respiratory disease tend to cause death at an older age, whereas accidents and injuries often cause death among children, teenagers and young adults. This helps to explain why accidents and injuries are responsible for so many PYLL, even though more actual deaths result from the other three major causes of death.

Figure 4.6

Potential Years of Life Lost (PYLL) - Major Cause by gender Yukon, 1986 to 1996



Source: Yukon Bureau of Statistics, Vital Statistics Deaths database.

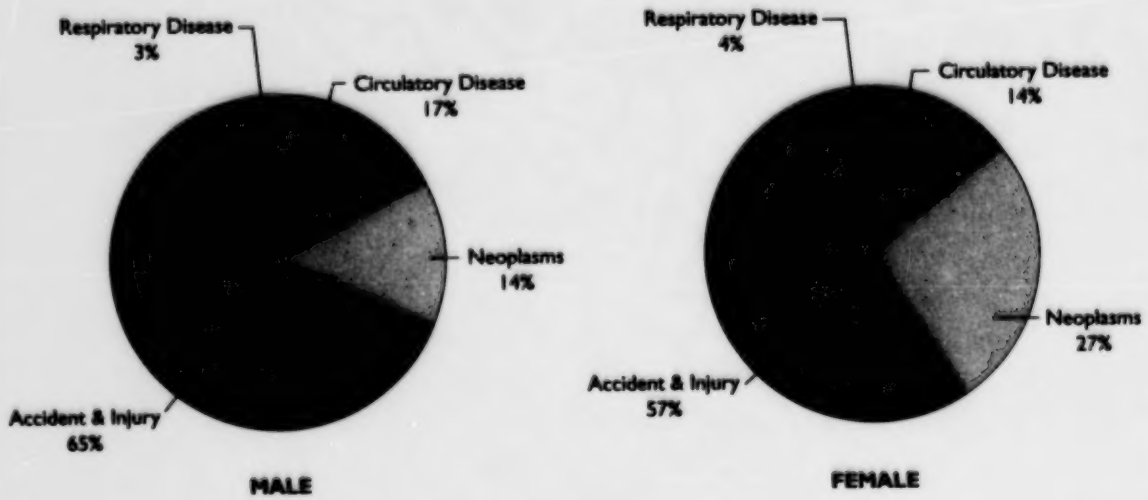
Notes: Potential years of life lost is calculated by taking the median age in each age group, subtracting from age 75, and multiplying by the number of deaths in that age group disaggregated by sex and cause of death.

Figure 4.6 shows the four major causes of PYLL in the Yukon between 1986 and 1996 and the percentage breakdown by gender within each cause. For each major cause of PYLL the percentage of Yukon males is greater than for Yukon females.

Within the "accident and injury" cause, 76.5% of PYLL were males and 23.3% were females. These percentages are the same for PYLL due to circulatory disease. PYLL due to neoplasms (cancer) has a closer gender distribution with 59.0% for males and 41% for females.

Figure 4.7

Potential Years of Life Lost (PYLL) - by Major Cause and Gender, Yukon, 1986 to 1996



Source: Yukon Bureau of Statistics, Vital Statistics Deaths database.

Notes: Potential years of life lost is calculated by taking the median age in each age group, subtracting from age 75, and multiplying by the number of deaths in that age group disaggregated by sex and cause of death.

Figure 4.7 shows the percentage of PYLL, by major cause, for Yukon males and females between 1986 and 1996.

In the Yukon between 1986 and 1996, 65% of male and 57% of female PYLL was the result of accident and injury.

In the Yukon from 1986 to 1996, neoplasms (cancer), circulatory disease and respiratory disease combined (the three other major causes of death in the Yukon) account for fewer PYLL than accident and injury for both sexes.

Neoplasms (cancer) in the Yukon account for 14% of male and 27% of female PYLL.

Circulatory disease accounts for 17% of male and 14% of female PYLL in the Yukon.

The fourth major cause of death, respiratory disease, is responsible for 3% of male PYLL and 4% of female PYLL in the Yukon.

4.6 CAUSES OF DEATH

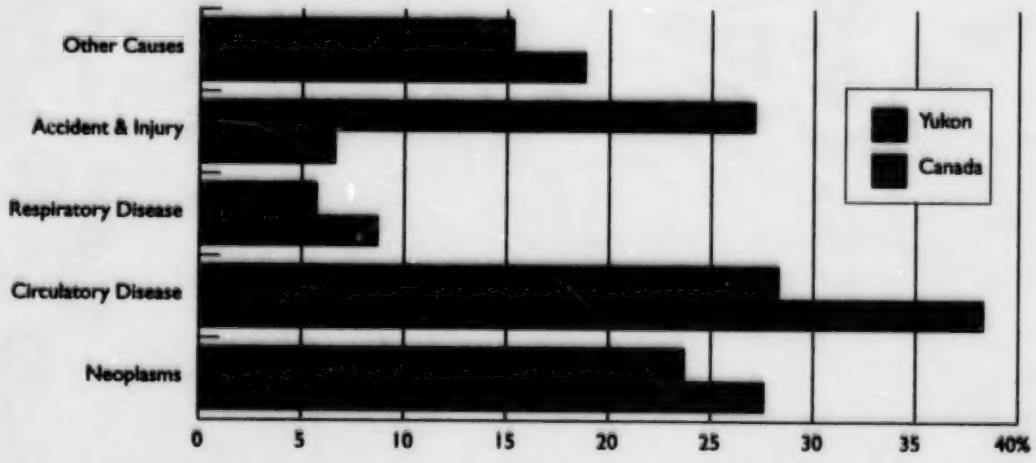
4.6.1 DEATH BY MAJOR CAUSE

Cause of death is determined by ICD-9 code (International Classification of Disease, Version 9). The most recent Canadian data available on cause of death at the time of this report are for 1995. Comparative data on the cause of death in the Yukon and Canada are for 1991 to 1995. Additional data on the cause of death in the Yukon are also presented for the years 1986 to 1996.

Between 1991 and 1995, the three major causes of death in the Yukon were circulatory disease, accident and injury, and neoplasms (cancer). Respiratory disease is a distant fourth. For Canada, the leading cause of death is circulatory disease, followed by neoplasms, then respiratory disease and fourth is accident and injury.

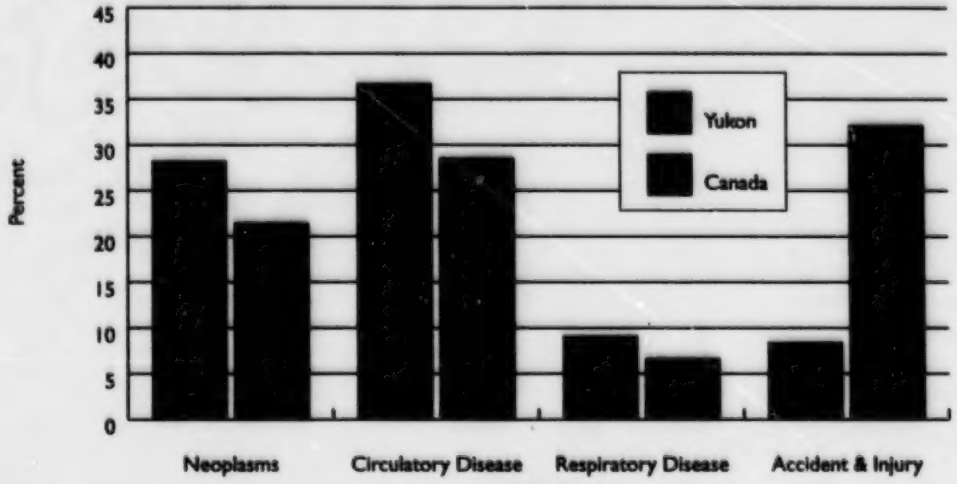
Accident and injury includes motor vehicle accidents, suicide, accidental falls, homicide and other external causes of injury (see section 5.2.3 for more information on the types of accident and injury causing death). Circulatory disease includes coronary heart disease, stroke, and vascular disease. Neoplasms include all the different kinds of cancer (see section 5.2.2 for more information on the types of cancer causing death). Respiratory disease includes pneumonia and chronic obstructive lung disease, and not lung cancer.

Figure 4.8
Distribution of Death by Major Cause, Canada and Yukon, 1991 to 1995



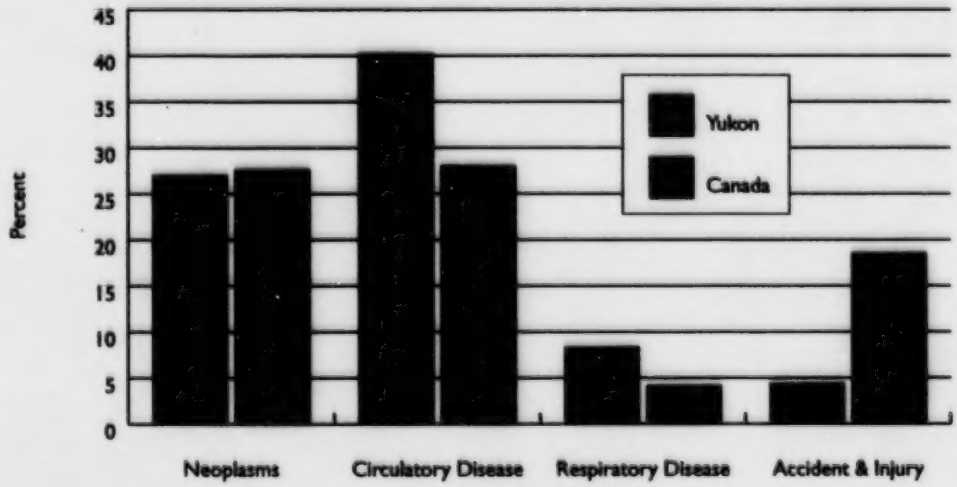
Source: Statistics Canada, Mortality - Summary List of Causes
Yukon Bureau of Statistics, Vital Statistics Deaths database.
Notes: Major cause of death is determined by ICD-9 code (International Classification of Disease - version 9)

Figure 4.9 (a)
Causes of Death



MALE
Canada and Yukon, 1991 to 1995

Figure 4.9 (b)
Causes of Death



FEMALE
Canada and Yukon, 1991 to 1995

Source: Statistics Canada, Mortality - Summary List of Causes, Yukon Bureau of Statistics, Vital Statistics Deaths database.
Notes: Cause of death is determined by ICD-9 code (International Classification of Disease - version 9)
Remaining percentage (to total 100%) composed of "other" cases.

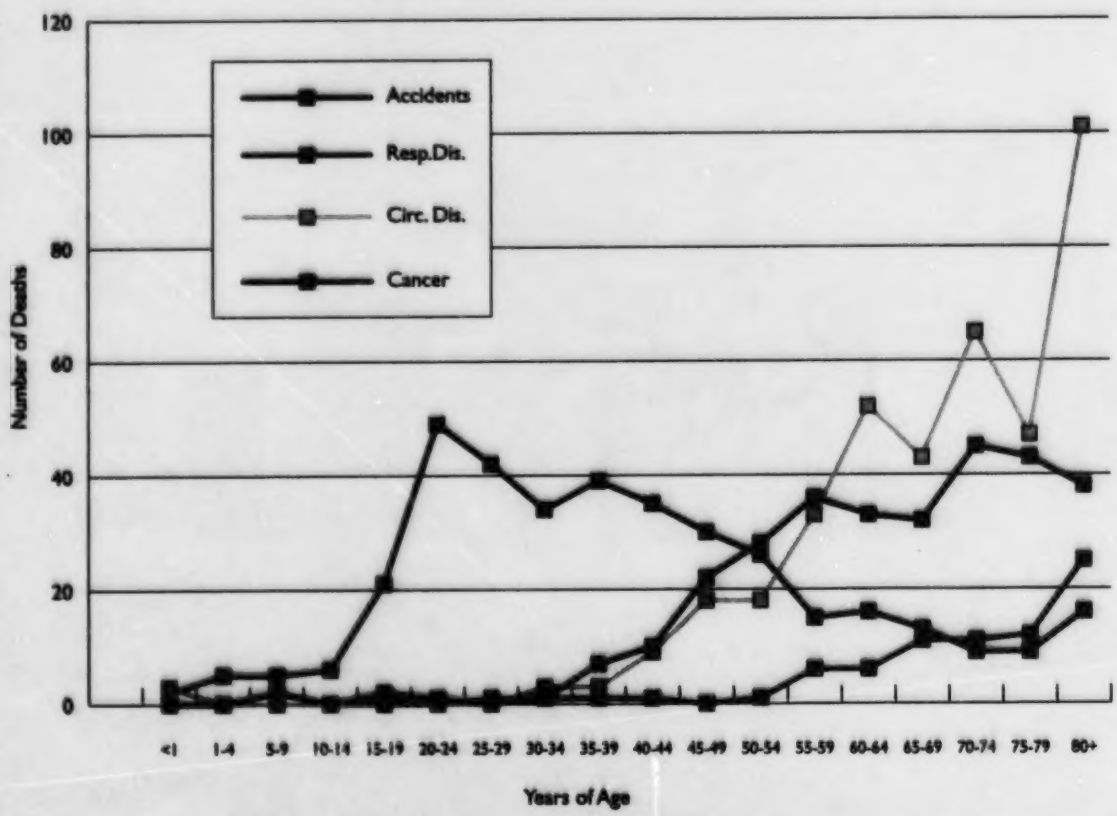
Figure 4.9(a) shows that Yukon males die less often from cancer, circulatory disease and respiratory disease than Canadian males. The percentage of deaths from accidents and injury in Yukon males, however, is more than three times higher than the Canadian figure and is the most common cause of death in this group.

Figure 4.9(b) shows that Yukon females have about the same percentage death rate from cancer as Canadian women but a much lower percentage death rate from circulatory and respiratory disease. Despite the fact that the percentage of deaths from accidents and injuries is also about three times the Canadian figure, this is only the third most common cause of death in Yukon women.

The high percentage of deaths from accidents and injury in Yukon men and women is a persistent finding and was noted in the last two Health Status Reports. This alone is enough to explain the higher standardized death rates and age-specific death rates in Yukon men and women. It may also be a major factor in the reduced life expectancy of Yukon men and women. The lower cancer and circulatory disease rates are probably due to the fact that these are predominantly diseases of old age and a good number of these deaths are replaced by trauma deaths at a younger age.

Figure 4.10

Major Causes of Death by Age Group 1986 to 1996. Yukon Bureau of Statistics.



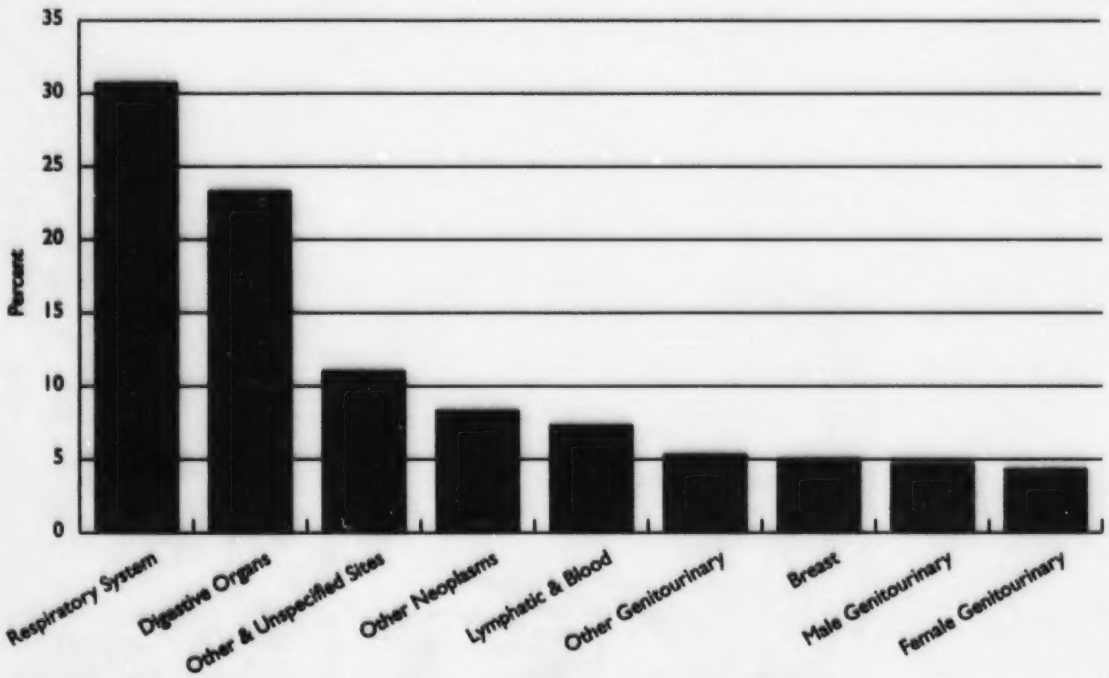
In figure 4.10 the trends of numbers of death for the four major causes show more or less what is expected for cancer, circulatory and respiratory diseases. They are diseases of middle to old age.

The number of trauma deaths in the Yukon is much higher than expected from the Canadian figures. This will be studied in more detail in section 5.2.2.

Appendix 4 shows the breakdown of the four major causes of death in the Yukon between 1986 and 1996 by age group and gender.

Figure 4.11

Cancer Deaths by Type, Yukon, Total 1986 to 1996



Source: Yukon Bureau of Statistics, Vital Statistics Deaths database.
Notes: Type of cancer is determined by ICD-9 code (International Classification of Disease - version 9)

4.6.2 DEATHS CAUSED BY CANCER

Types of cancer are determined by ICD-9 code (International Classification of Disease, Version 9).

More detailed data on the types of cancer causing death in the Yukon are available than in previous health status reports. Ten years of data for 1986 to 1996 enables such an examination.

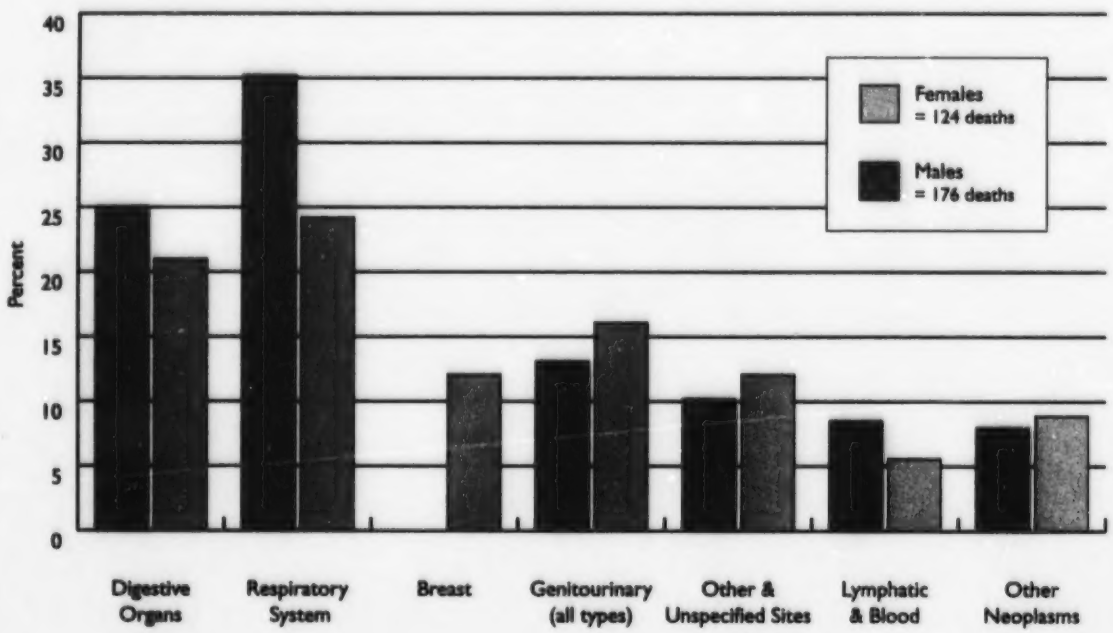
Between 1986 and 1996 there were 300 deaths caused by cancer, the third most frequent cause of death in the Yukon. Figure 4.11 presents the percentage breakdown by type of cancer. The most frequent type of cancer causing death in the Yukon is cancer of the respiratory system - lung cancer (30.7%). The second most frequent cancer is that of the digestive system. This is mainly of colon cancer but also includes less common cancers such as those of the liver, gall bladder and pancreas. These two types of cancer together account for 54% of cancer deaths in the past ten years.

11.0% of cancer deaths are caused by cancer in 'other and unspecified sites', including brain cancer, cancer of the mouth, and of bone, muscle, thyroid and other endocrine glands.

Genitourinary cancer in females includes the uterus, ovaries, and cervix. In males it includes cancer of the prostate, testis and penis. It also includes cancer of the kidney and bladder. 'Other neoplasms' include cancers of the lip and mouth, bone and connective tissue and skin.

Figure 4.12

Cancer Deaths by Gender and Type, Yukon, Total 1986 to 1996



Source: Yukon Bureau of Statistics, Vital Statistics Deaths database.
Notes: Type of cancer is determined by ICD-9 code (International Classification of Disease - version 9)

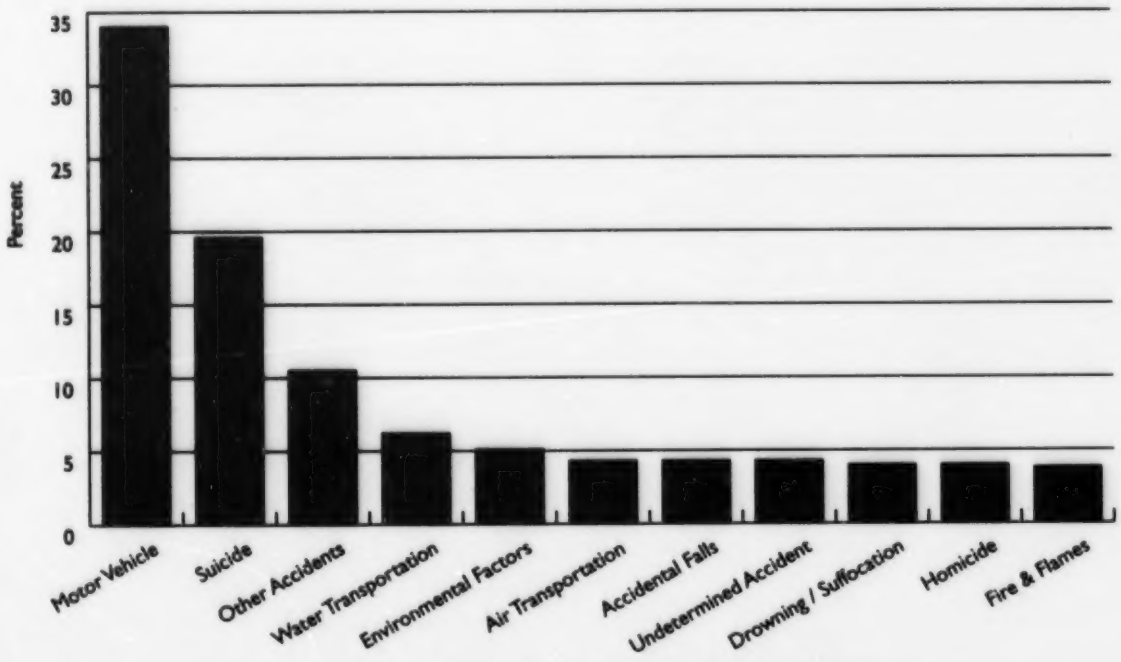
Lung cancer, the most common cause of cancer death in the Yukon, is almost completely preventable by not smoking. It occurs about 70 times more often in those who smoke two packets of cigarettes a day than in those who do not smoke. A lower level of smoking results in a lower incidence of lung cancer. Smoking is also the major cause of bladder cancer as well as being a major cause of circulatory disease. In the last ten years lung cancer has overtaken breast cancer as the most common cause of cancer death in women. As women now take up smoking more than men do, it is expected that their lung cancer rates will be higher than that in men in a very few years.

4.6.3 ACCIDENT AND INJURY CAUSING DEATH

Previous health status reports have indicated the need to better understand the high rates of death and PYLL due to accident and injury in the Yukon. Small numbers have not permitted reporting the types of accident and injury causing death until now (data is available for 1986 to 1996).

Figure 4.13

Type of Accidents and Injuries Causing Death, Yukon, Total 1986 to 1996



Source: Yukon Bureau of Statistics, Vital Statistics Deaths database.

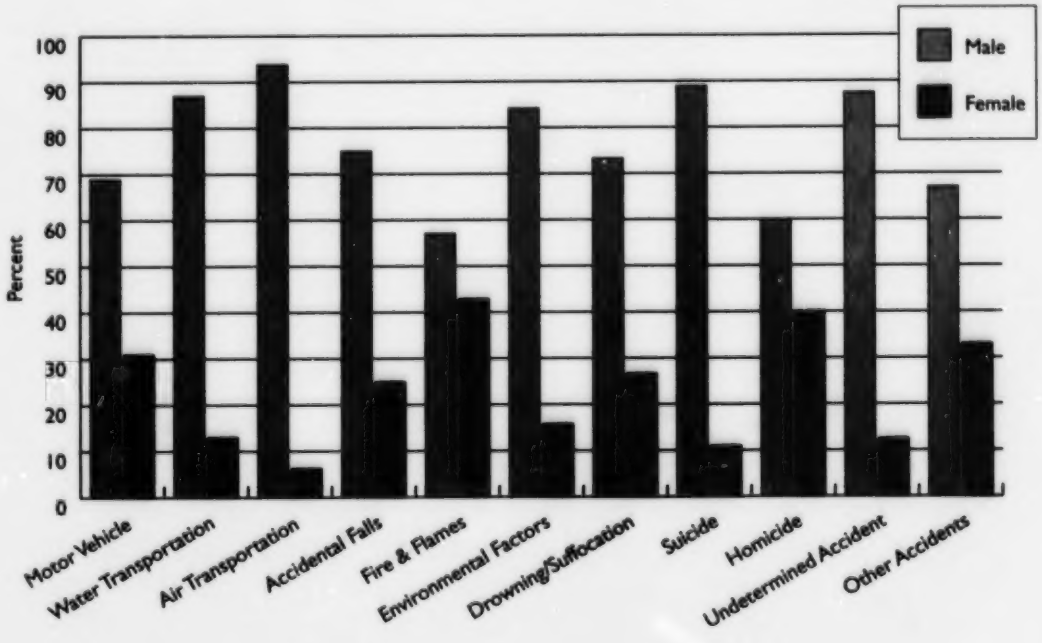
Notes: Type of accident/injury is determined by ICD-9 code (International Classification of Disease - version 9)
Environmental factors include deaths due to weather conditions, e.g. excessive cold or heat.

Type of accident and injury is determined by 'E codes' (external cause of injury) which are contained in the ICD-9 (International Classification of Disease - 9) coding system.

Between 1986 and 1996 there were 372 deaths due to accident and injury, the second most frequent cause of death in the Yukon and the most frequent cause for males. Figure 4.13 shows the percentage breakdown by type of accident and injury causing death. The most frequent type of accident and injury causing death in the Yukon is a motor vehicle accident (33.9%). The second most frequent type is suicide (19.6%) followed by 'other accidents' at 10.5%. A high rate of death from accidents and injuries, including suicide, has been related to employment type, drug and alcohol abuse, mental illness and socioeconomic status. In the Yukon there are no data to support this directly and, if there were, the numbers would probably not be statistically significant for reasons already discussed.

Figure 4.14

Type of Accidents and Injuries Causing Death, by Gender - Yukon, Total 1986 to 1996



Source: Yukon Bureau of Statistics, Vital Statistics Deaths database.

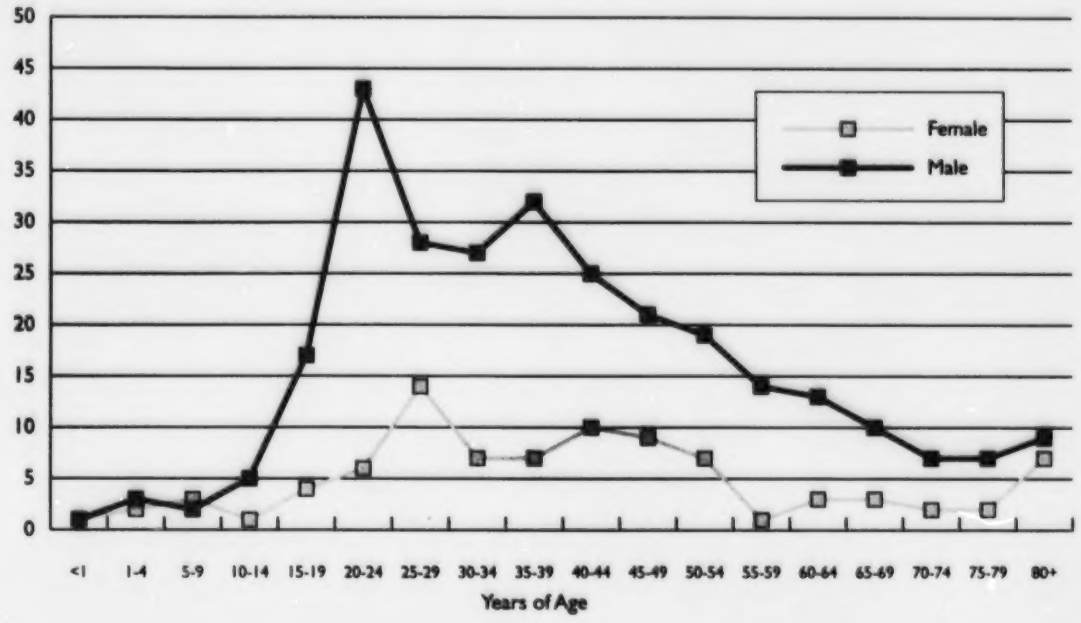
Notes: Type of accident/injury is determined by ICD-9 code (International Classification of Disease - version 9)
Environmental factors include deaths due to weather conditions, e.g. excessive cold or heat.

Figure 4.14 shows the percentage breakdown by gender for the types of accidents and injuries causing death for Yukon males and females between 1986 and 1996. Of the 372 deaths due to accident and injury, 76.1% (283) of those deaths were male. Each of these causes overwhelmingly kills males more than females. This is especially true of transportation-related causes and suicide. The "undetermined accident", predominantly a male event, is also thought to be mainly suicide.

Many of these causes are clearly exacerbated by alcohol and, while there are no direct data relating trauma and accident deaths to alcohol abuse, there are data that suggest that alcohol is a factor in many of these deaths. (See section 4.6.4)

Figure 4.15

Total Accident and Injury Deaths per Age Group Yukon, Total 1986 to 1996



Source: Yukon Bureau of Statistics, Vital Statistics Deaths database.

Figure 4.15 examines the percentage breakdown of Yukon deaths due to accident and injury by age group and gender.

Between 1986 and 1996, the victims of accident and injury deaths have primarily been young males. By single age group, 15.2% of deaths due to accident and injury were males between 20-24 years of age. When age groups are combined, 55.8% of these deaths were men less than 39 years of age. In fact, 31.1% of accident and injury deaths were males between 15-30 years of age. Given the fact that the majority of accident and injury deaths in the Yukon over the past 10 years have been male (76%), and mostly young males, this helps to understand why the PYLL due to accident and injury is so high.

Approximately one quarter of the accident and injury deaths in the Yukon over the past 10 years has been female (23.9%). 15.7% of these deaths were females between 25-29 years of age and 15.7% females 65 years and older. When age groups are combined, approximately half of the female deaths due to accident and injury were females less than 39 years of age and half were 40 years or older. Due to the small actual numbers involved, caution should be exercised when drawing conclusions from these data.

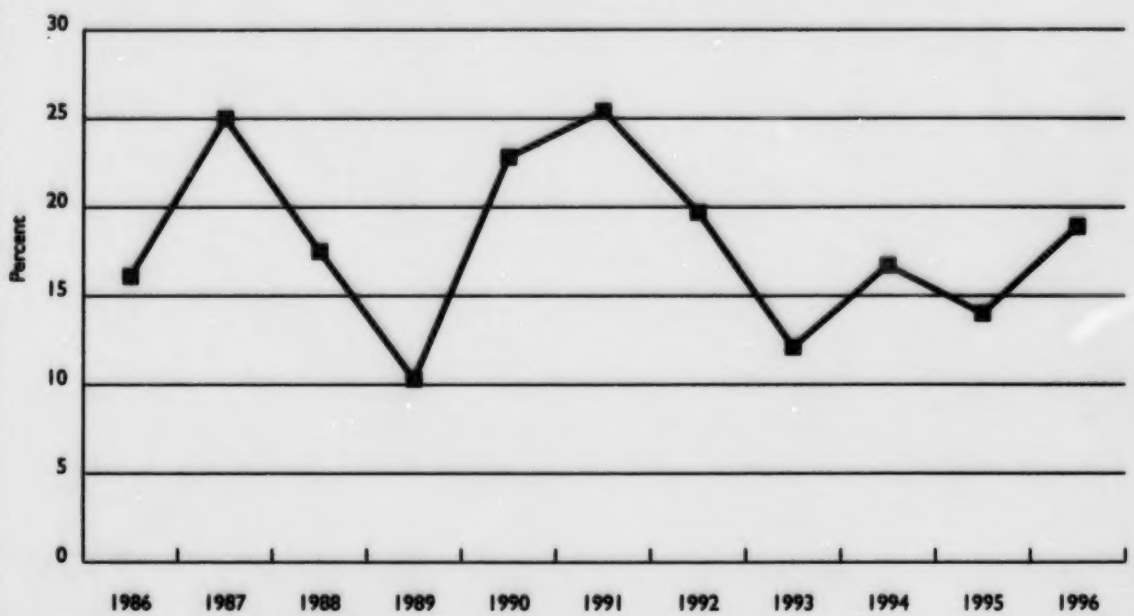
4.6.4 DEATHS WITH ALCOHOL PRESENT

Figure 4.16 shows the percentage of all deaths in the Yukon where alcohol was present between 1986 and 1996. Presence of alcohol is documented on the death certificate as a primary or secondary cause of death (note: only the presence of alcohol is indicated; other drugs are not included). The percentage has fluctuated from a high of 25% in 1987 and 1991 to a low of 10.3% in 1989. This figure shows all deaths. In causes of death other than accidents, trauma, suicide, etc., there is seldom an indication to list alcohol use or abuse on the death certificate. What this means is that, if only deaths related to the accidents and injuries category were examined, the contribution of alcohol abuse to death would be expected to be much higher than the graph shows.

These figures are preliminary. There are no Canadian comparisons. Despite this, it is important to present them so that this area can be further explored in future.

Figure 4.16

Deaths with Presence of Alcohol - Yukon, 1986 to 1996



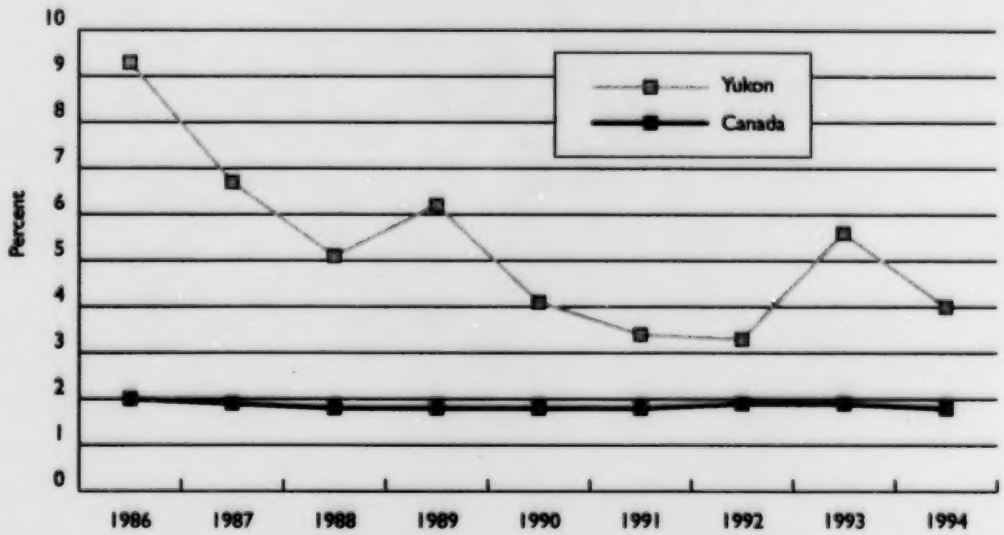
Source: Yukon Bureau of Statistics, Vital Statistics Deaths database.
Notes: Presence of alcohol is documented on the death certificate as a primary or secondary cause of death.
Only the presence of alcohol is indicated, drugs are not included.

4.6.5 SUICIDES

Figure 4.17 shows a comparison of the percentage of suicides of all deaths for the Yukon and Canada between 1986 and 1994. Though the percentage is quite volatile from year to year due to the small actual numbers involved, the Yukon has a consistently higher percentage than the rest of Canada. Therefore the general conclusion that the suicide rate is higher in the Yukon than in Canada is valid. It is also reasonable to assume that the trend is down.

Figure 4.17

Suicides as a Percentage of All Deaths, Canada and Yukon, 1986 to 1994.



Source: Statistics Canada: Health Indicators 1997
Yukon Bureau of Statistics: Vital Statistics Suicide database.

The most striking finding is that suicide is a predominantly male cause of death with 89% of all 73 suicide deaths between 1986 and 1996 being male. (See Figure 4.18.) Unfortunately there is no breakdown for geographic or socioeconomic status. Nor are there reliable data on the involvement of alcohol or drug abuse. Even if this were available the numbers would be too small to allow the drawing of any useful conclusions.

The most frequent method used to commit suicide in the Yukon is a firearm (61.6%).

Between 1986 and 1996 suicide rates were highest in 20-24 year olds followed by 35-39 year olds. Approximately half of the cases were individuals 10-34 years of age and half 35 years and older.

4.7 SUMMARY

1. Yukon life expectancy is about 10% shorter than that of Canada. Death rates are slightly higher in all age groups.
2. Yukoners have a higher percentage of potential years of life lost (PYLL) through trauma, including accidents and suicides, than Canadians do. 76% of trauma deaths are in males.
3. Cancer death rates in the Yukon seem to be lower than in Canada but the figures are too small to deduce this with certainty.
4. Though only rough figures are available, there is an unavoidable conclusion that alcohol is a major factor in deaths in the Yukon.
5. The Yukon has a higher suicide rate than Canada. Between 1986 and 1996, 89% of suicides were males.

Chapter 4: Mortality

Data and Research Questions:

- **What are the components of the lower life expectancy in Yukoners?**
- **Is there a segment, other than gender, of the population in which trauma rates are especially high or is this phenomenon spread over all Yukoners?**
- **In which deaths is alcohol an important factor?**
- **Is there a better way to capture alcohol-related death and injury data?**
- **What is the effect of migration on life expectancy statistics?**

Priority for Action:

- **The information needed from death certificates should be reviewed and these certificates changed as necessary.**
- **The development of a formal trauma registry would help in the collection of data necessary in the planning of interventions.**
- **In view of the high accident rates, strategies to reduce trauma in the Yukon should be explored.**
- **Effects of recent initiatives, i.e. seatbelts, stricter drinking and driving penalties on deaths resulting from MVAs should be carefully monitored.**

CHAPTER 5:
BIRTHS & THERAPEUTIC ABORTIONS

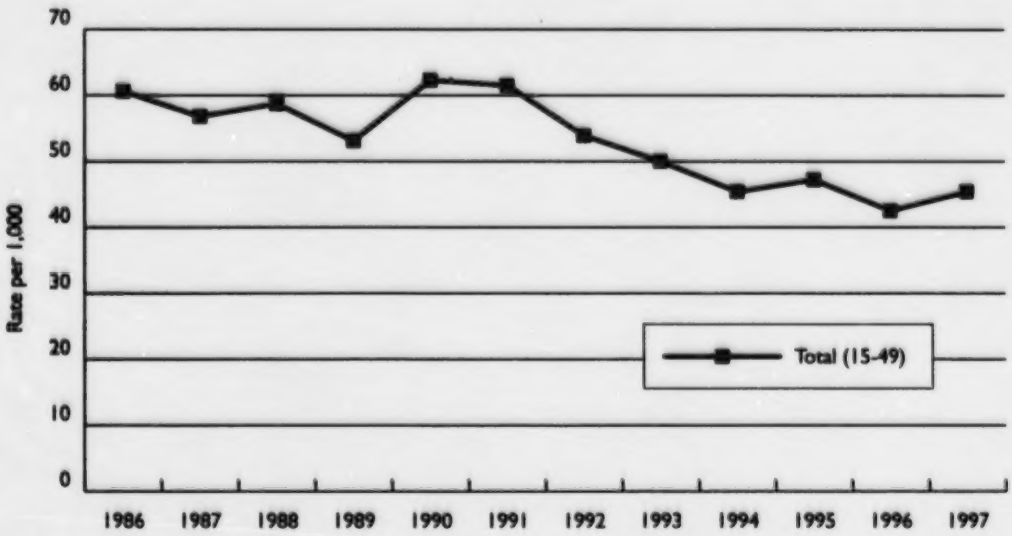
5.1 INTRODUCTION

Birth rates and their distribution across maternal age groups are used to calculate the rate of natural increase of a population. Ages at which women have children say something about the social and cultural structure of a society. A small number of children per woman with first pregnancy at a later age is the pattern most often seen in wealthy societies. Less wealthy and more traditional societies tend to have more children per woman beginning at an earlier age.

Abortion rates are useful to assess the numbers of unwanted pregnancies in a population and also to give an indication of the availibility and ease of access of abortion. This may help in social planning, reproductive health education and in the provision of services such as family planning.

5.2 BIRTH RATES

Figure 5.1
Birth Rate per 1,000 Women Aged 15-49 Years, Yukon, 1986 to 1997



Source: Yukon Bureau of Statistics, Vital Statistics Births database, Health Care Registration Population Estimates.
Notes: Birth rates are calculated by dividing the number of births in each year by the number of 15-49 year old women in the Yukon population in that year. The rate is per 1,000 women aged 15-49 years.

5.2.1 YUKON BIRTH RATE

Birth rate: is the number of live births per 1,000 women of reproductive age i.e. those aged 15-49. It is a more specific measure than the crude birth rate, which is the number of births per 1000 population.

Figure 5.1 shows the Yukon birth rate between 1986 and 1997. The rate has ranged between a high of 62.3 births per 1,000 in 1990 and a low of 42.5 births per 1,000 in 1996. Since 1990 the birth rate has declined.

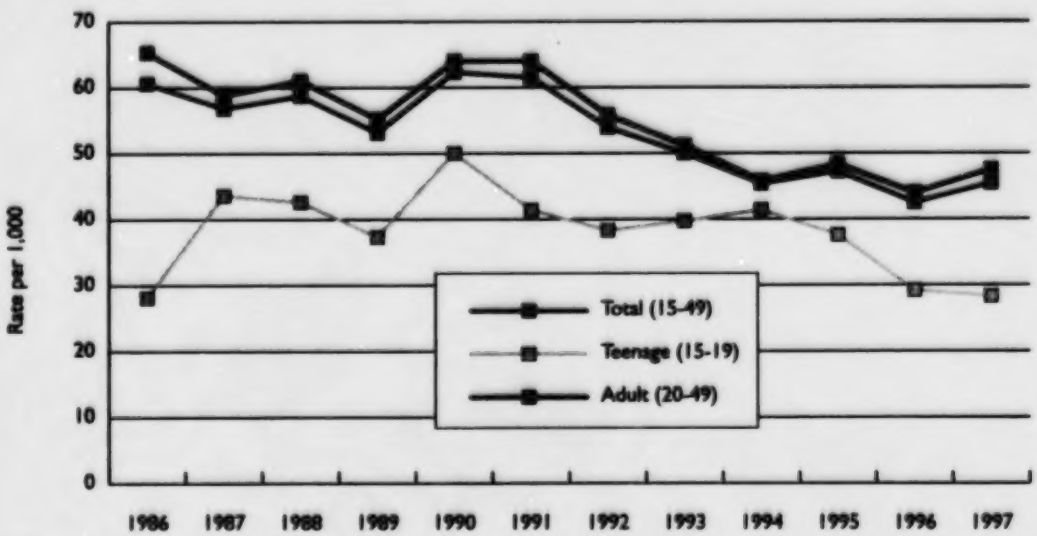
5.2.2 YUKON BIRTH RATE, AGE COMPARISON

Age-specific birth rate: the number of live births to women in a specific age group per 1,000 women in that age group.

Figure 5.2 shows the trend of the total birth rate as well as the trends in birthrates for women under 20 and those over 20. No births were reported in women older than 49 from 1986 to 1997.

Between 1986 and 1997, the adult birth rate mirrored the total birth rate (this is because the majority of births in the Yukon have been to adult women). The high was 65.3 births per 1,000 in 1986 and a low of 44 per 1,000 births in 1996. Since 1990 the adult birth rate has declined.

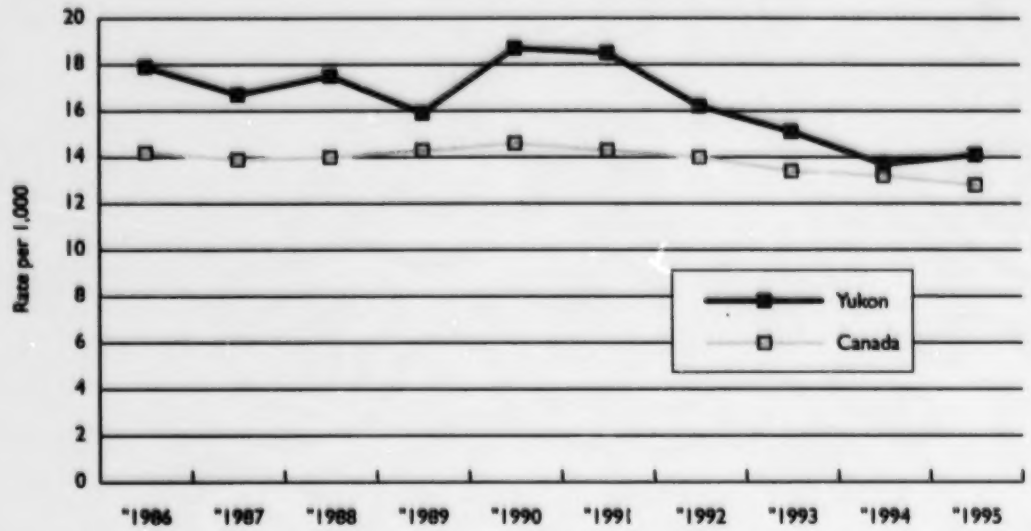
Figure 5.2
Birth Rate by Age Group, Yukon, 1986 to 1997



Source: Yukon Bureau of Statistics, Vital Statistics Births database, Health Care Registration Population Estimates.
The rate is per 1,000 women in each age group.

[1] Yukon birth rates include the number of births by Yukon resident women who gave birth in the Yukon; it does not include Yukon resident women who gave birth outside the Yukon or non-Yukon resident women who gave birth in the Yukon.

Figure 5.3
Crude Birth Rate, Canada and Yukon, 1986 to 1995



Source: Statistics Canada, Births and Deaths 1995
Yukon Bureau of Statistics, Vital Statistics Births database.

The Yukon teenage birth rate is lower than the adult birth rate. The high was 50 births per 1,000 in 1990 and the low was 28.1 per 1,000 in 1986. The teenage birth rate has been more volatile than the adult rate due to the small numbers involved but since 1990 the teenage birth rate in the Yukon has tended to decline.

5.2.3 CRUDE BIRTH RATE, CANADA AND YUKON

Crude birth rate: the number of live births per 1,000 population. Between 1986 and 1995 the Yukon crude birth rate was higher than the Canadian rate. Since 1993 the rates have been converging. The Canadian crude birth rate has been steady and ranges from 12 to 14 births per 1,000 population. The Yukon rate has fluctuated from a high of 18.7 births per 1,000 in 1990 to a low of 13.7 per 1,000 in 1994. Both Canadian and Yukon crude birth rates have declined since 1990.

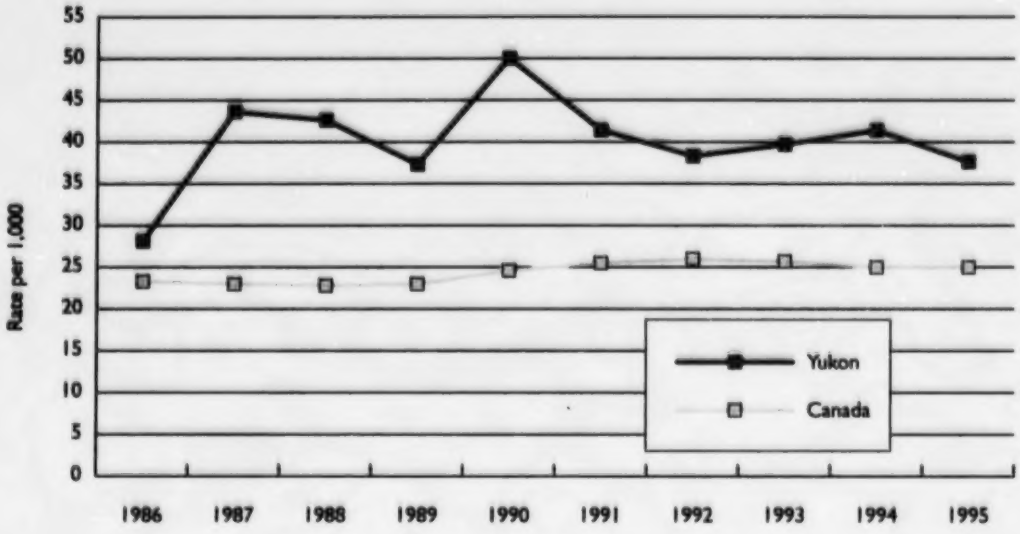
5.2.4 TEENAGE BIRTH RATE, CANADA AND YUKON

Figure 5.4 shows the teenage birth rate for the Yukon and Canada between 1986 and 1995. The Yukon teenage birth rate is consistently higher than the Canadian rate. The Yukon rate fluctuated from a low of 28.1 births per 1,000 teenage women in 1986 to a high of 50 births per 1,000 teenage women in 1990. The Canadian teenage birth rate has consistently ranged between 23-25 births per 1,000 teenage women. Since 1990 the Yukon teenage birth rate has tended to decline; however, caution should be exercised when interpreting this data due to the small numbers involved.

Teenage birth rates are further explored in the chapter on reproductive health.

Figure 5.4

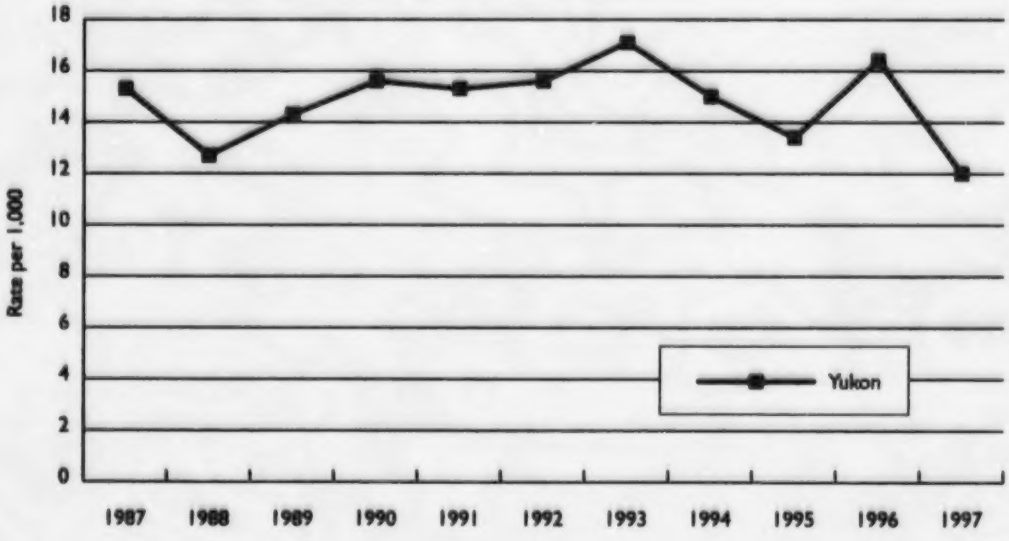
Teenage Birth Rate, Canada and Yukon, 1986 to 1995
Rate per 1,000 women aged 15-19 years



Source: Statistics Canada, Births and Deaths 1995
Yukon Bureau of Statistics, Vital Statistics Births database.

Figure 5.5

Therapeutic Abortion Rate, Yukon, 1987 to 1997
Rate per 1,000 women 15-49 years.



Source: Yukon Bureau of Statistics, Therapeutic Abortions database, Health Care Registration Population Estimates.

5.3 THERAPEUTIC ABORTION RATES

5.3.1. THERAPEUTIC ABORTION RATE

Therapeutic abortion rate: the number of therapeutic abortions per 1,000 females aged 15-49. Therapeutic abortion statistics only include abortions performed at the Whitehorse General Hospital.

Figure 5.6 shows the therapeutic abortion rate for the Yukon between 1987 and 1997. The rate has fluctuated from a high of 17.1 per 1,000 women in 1993 to a low of 12.7 per 1,000 women in 1988. The rate is quite volatile due to the small numbers involved.

Therapeutic abortion rates are further explored in the chapter on reproductive health.

5.3.2 YUKON AND CANADA, THERAPEUTIC ABORTION RATES

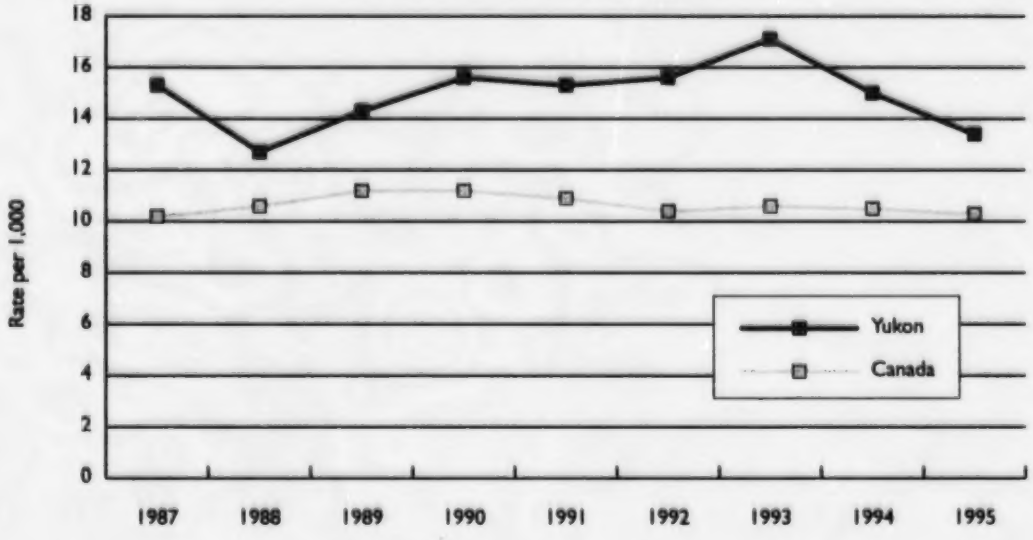
Figure 5.6 shows a comparison of the therapeutic abortion rate for the Yukon and Canada between 1986 and 1995. The Yukon rate is higher than the Canadian rate. The Canadian rate remains at approximately 10 abortions per 1,000 women. The Yukon rate has fluctuated from a high of 17.1 abortions per 1,000 women in 1993 to a low of 12.7 abortions per 1,000 women in 1988. Since 1993 the Yukon therapeutic abortion rate has tended to decline but is consistently higher than the Canadian rate.

Abortion rates will be explored in more detail in the chapter on reproductive health.

Figure 5.6

Therapeutic Abortion Rate, Canada and Yukon, 1987 to 1995

Rate per 1,000 females aged 15-49 years



Source: Statistics Canada, Therapeutic Abortions 1995
Yukon Bureau of Statistics, Therapeutic Abortions database.
Notes: Therapeutic Abortion Rate - number of therapeutic abortions per 1,000 females aged 15-49 years.

5.4 SUMMARY

1. Yukon women of childbearing age are having fewer babies than previously. This is also the trend in Canada and in other developed countries.
2. The teenage birth rate in the Yukon tends to decline and is approaching the Canadian rate quite quickly.
3. The Yukon therapeutic abortion rate is somewhat higher than Canada's but is volatile because of the small numbers.

Chapter 5: Births and Therapeutic Abortions

Data and Research Questions:

- **see this section in Chapter 8: Reproductive Health.**

Priority for Action:

- **see this section in Chapter 8: Reproductive Health**

CHAPTER 6:
INJURY HOSPITALIZATION DATA

6.1 INTRODUCTION

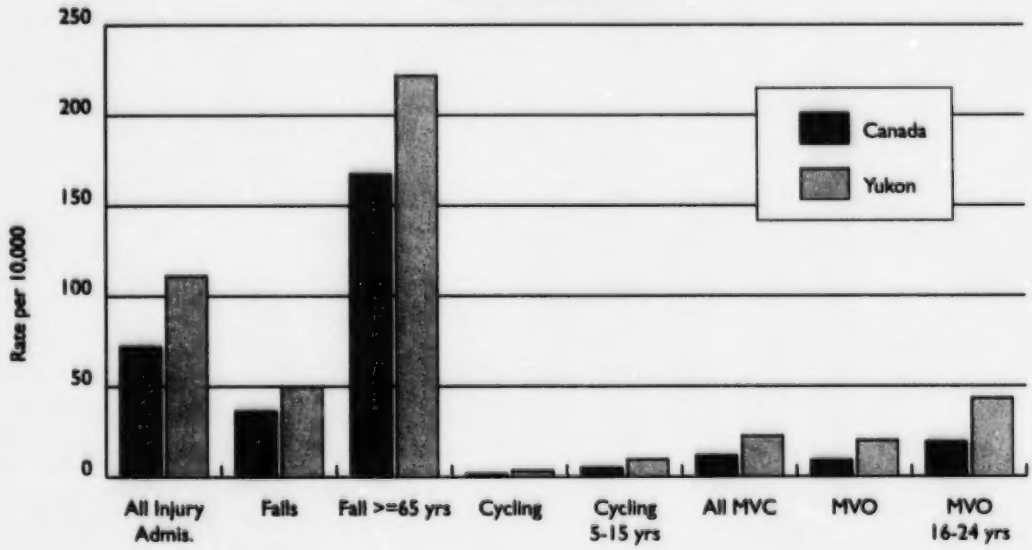
Injuries are a major cause of morbidity and mortality in younger age groups. Most injuries are preventable. Knowing the statistical details of injuries may help in planning prevention strategies.

In April 1998, the Canadian Institute of Health Information (CIHI) released injury hospitalization data for Canada, the provinces and territories. The data are for 1995/1996 and are from the National Trauma Registry.

Data presented here are from the Whitehorse General Hospital as regularly provided to the Canadian Institute of Health Information (CIHI) and are based on admissions to hospital. While Whitehorse General Hospital inpatient data are complete, those injuries resulting in death before arrival at the hospital or those requiring admission to the nursing stations are not included. Injuries not severe enough to require admission, by far the majority of total injuries, are not included.

6.2. INJURY HOSPITALIZATION BY MAJOR CAUSE

Figure 6.1
Injury Hospitalization by Major Cause, Yukon and Canada, 1995/1996
Rate per 10,000 population



Source: National Trauma Registry, Canadian Institute of Health Information
Notes: Catagories are based on External Causes of Injury Codes (E Codes) which are contained in the International Classification of Diseases (ICD-9) coding system. The rate is directly standardized for age and sex using Canada 1991 as the standard population.
Definitions: MVC = Motor Vehicle Collisions MVO = Motor Vehicle Occupants

In 1995/1996 there were 273 admissions to Whitehorse General Hospital for injury (all causes). Figure 6.1 shows the admission rate per 10,000 population, by major cause of injury, for the Yukon and Canada.

The Yukon hospital admission rate for all injuries was 111.3. The rate for Canada was 72.2. The admission rate for the Yukon was higher than Canada's for each major cause of injury.

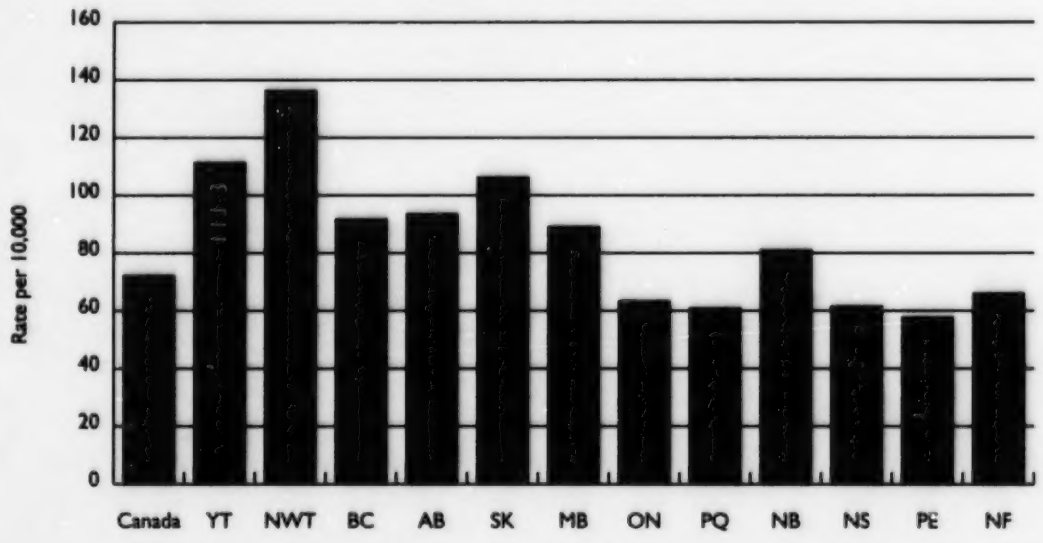
The highest rate of admission for the Yukon was for unintentional falls by people 65 years or older at 222.1 (22 admissions in 1995/1996). Unintentional falls for all ages has the second highest rate at 50.1 (101 admissions). Motor vehicle occupants between 16-24 years of age had an admission rate of 43.4 (16 admissions). All motor vehicle collisions accounted for 66 hospital admissions at a rate of 16.7.

Although the major single cause of injury was falls in the elderly, the average age of people admitted for injury was 35.6 years for the Yukon and 47.3 years for Canada. The median age of admissions for the Yukon was 33 years and 45 years for Canada.

6.3 INJURY HOSPITALIZATIONS BY MAJOR CAUSE, BY PROVINCE & TERRITORY

Figure 6.2

All Injury Admissions, by Province and Territory, 1995/1996
Rate per 10,000 population



Source: National Trauma Registry, Canadian Institute of Health Information

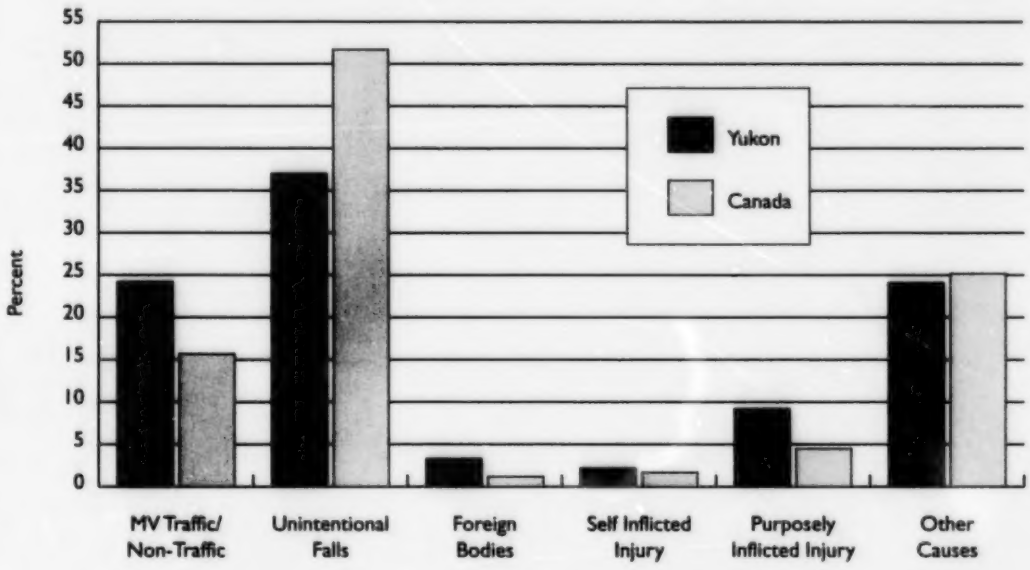
Notes: Catagories are based on External Causes of Injury Codes (E Codes) which are contained in the International Classification of Diseases (ICD-9) coding system. The rate is directly standardized for age and sex using Canada 1991 as the standard population.

In 1995/1996 the Yukon had the second highest rate of hospital admissions for all types of injury in Canada at 111.3 per 10,000 population. The Northwest Territories had the highest rate at 136.3. The Canadian rate was 72.2. Prince Edward Island had the lowest rate of admission at 57.7.

6.4 EXTERNAL CAUSES OF INJURY, YUKON & CANADA

Figure 6.3

External Causes of Injury Hospitalizations, Yukon and Canada, 1995/1996



Source: National Trauma Registry, Canadian Institute of Health Information
Notes: Catagories are based on External Causes of Injury Codes (E Codes) which are contained in the International Classification of Diseases (ICD-9) coding system.

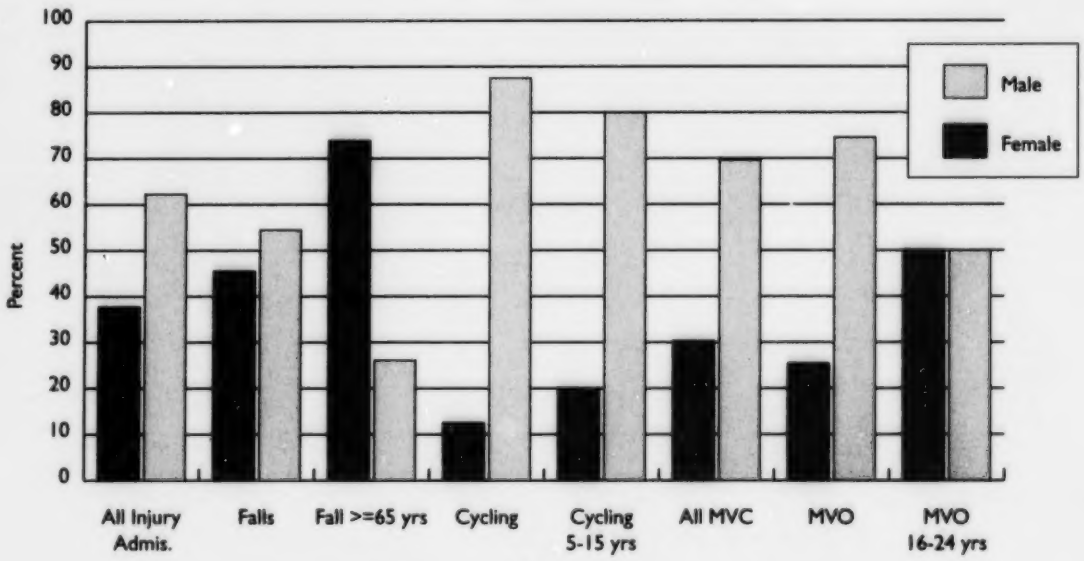
In 1995/1996 there were 273 admissions to Whitehorse General Hospital for injury. Figure 6.3 shows the percentage breakdown by major cause of injury for the Yukon and Canada.

37% of admissions in the Yukon were the result of unintentional falls, followed by motor vehicle traffic and non-traffic injuries (24.2%), then 'other causes' at 23.9%. Across Canada, the highest percentage of admissions was due to unintentional falls (51.7%), then 'other causes' (25.2%), followed by motor vehicle traffic and non-traffic injuries (15.7%). The percentage of admissions due to motor vehicle injuries was higher in the Yukon (24.2%) than across Canada (15.7%).The percentage for purposely inflicted injuries (injuries inflicted by another person, e.g. attempted homicide) was twice as high in the Yukon (9.2%) than Canada (4.5%) in 1995/1996.

6.5 INJURY HOSPITALIZATION BY MAJOR CAUSE & GENDER

Figure 6.4

Injury Hospitalization by Major Cause and Gender, Yukon, 1995/1996



Source: National Trauma Registry, Canadian Institute of Health Information

Notes: Catagories are based on External Causes of Injury Codes (E Codes) which are contained in the International Classification of Diseases (ICD-9) coding system. Definitions: MVC = Motor Vehicle Collisions MVO = Motor Vehicle Occupants

Figure 6.4 shows the gender breakdown for each major cause of injury hospitalization in the Yukon for 1995/1996. For all injury admissions, 62.3% of injury admissions were male and 37.7% were female. It is interesting to note that for motor vehicle occupants between 16-24 years of age, admissions were 50% female and 50% male.

As presented in Figure 6.4, the most frequent causes of injury admissions in the Yukon were unintentional falls (all ages and 65+ years), all motor vehicle collisions, and motor vehicle occupants (all ages). Unintentional falls (all ages) were almost evenly distributed between males and females (54.5% and 45.5% respectively). 73.9% of admissions due to unintentional falls for people aged 65 years or older were female and 12.5% were male.

Caution should be exercised when drawing conclusions from these data as only one year is presented and some categories involve very small numbers.

6.6 SUMMARY

1. Data on injuries in the Yukon is incomplete.
2. Injuries are the major cause of death in Yukon males and occur in both sexes at a much higher rate than in Canada.
3. Unintentional falls are the most common cause of hospital admission for injury.
4. Motor vehicle accidents are the second most common cause of hospitalization for injury.

Chapter 6: Injury Hospitalization Data

Data and Research Questions

- **What is the injury rate in the Yukon?**
- **What are the risk factors for injury?**
- **How big a risk factor is alcohol abuse?**
- **Other than male gender, is there a segment of the population that suffers a particularly high rate of injuries or is the distribution random?**

Priority for Action

- **There is an urgent need to establish an injury registry in the Yukon. Only then will we begin to have an idea of where to direct resources in injury prevention.**
- **The two largest categories of injury requiring hospitalization continue to be falls in the elderly and motor vehicle injuries. More work needs to be done in prevention in these areas.**

CHAPTER 7:
CANCER INCIDENCE AND MORTALITY

7.1 INTRODUCTION

The incidence and mortality for cancer are useful to show trends and to help plan preventive programs where these are appropriate, for example in lung cancer. In the small Yukon population such figures are not of considerable use but are reported for completeness.

The most recent cancer incidence and mortality data comparing the Yukon and Canada are for 1991-1993 (Gaudette et al). Cancer incidence data were obtained from the National Cancer Incidence Reporting System and the Canadian Cancer Registry. Mortality data were obtained from the Canadian Vital Statistics Database.

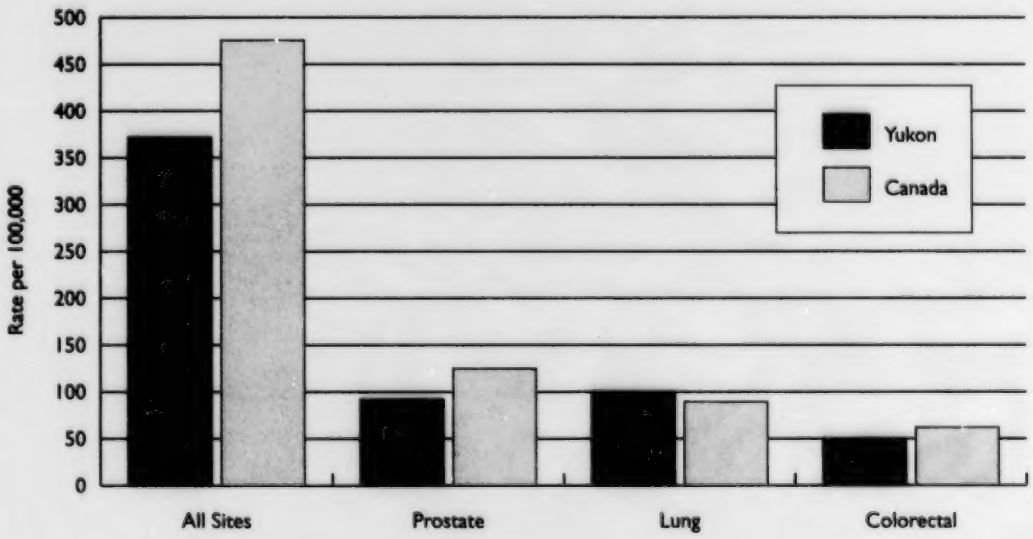
CAUTION! The problem with cancer statistics in the Yukon is again the problem of small numbers occurring in a small population. Most cancers have an incidence of less than 50 per 100,000 people per year. At that high incidence there would be about 16 of that type of cancer per year in the Yukon. Even a few more or less than this, as happens every year, will result in huge percentage variations.

7.2 CANCER INCIDENCE RATES

7.2.1 CANCER INCIDENCE RATES, MALES, CANADA & YUKON

Figure 7.1

Age - Standardized Cancer Incidence Rates, Selected Sites, Males, Yukon and Canada, 1991 to 1993



Source: Statistics Canada, Health Reports - Summer 1998, Vol. 10, No. 1

Note: Only seleced cancer sites are presented. Lung, prostate and colorectal cancer are the leading type of cancer which together accounted for over half of total cancer incidence and mortality in the 1991 - 1993 period.

Cancer incidence: the number of new cases per 100,000 people per year.

Cancer mortality: the number of deaths from cancer per 100,000 people per year

The terms "incidence and "mortality" can be used for the total numbers of cancer in a population or to describe the occurrence and death rate from a particular cancer. These terms can also be used to describe the occurrence of cancer in a particular age or gender group.

Age-standardized incidence and mortality rates were calculated for Canada, each province and territory, for men and women for major cancer sites for the 1991-1993 period. The age-standardized rate is cancer incidence or mortality per 100,000 that would have occurred in the standard population (1991 Canadian population) if the actual age-specific rates observed in a given population had prevailed in the standard population.

Figure7.1 shows a comparison of cancer incidence rates in selected sites for males between Canada and the Yukon for 1991-1993. For men in the Yukon, no cancer site had incidence rates significantly above the national level. For all cancer sites the incidence rate was 475.6 for Canadian males and 371.9 for Yukon males. The incidence rates for prostate and colorectal cancer were lower for Yukon males than for Canadian males. The incidence rate of lung cancer was slightly higher for Yukon males than Canadian males.

7.2.2 CANCER INCIDENCE RATES, FEMALES, CANADA & YUKON

Figure 7.2

Age - Standardized Cancer Incidence Rates, Selected Sites, Females, Yukon and Canada, 1991 to 1993

Source: Statistics Canada, Health Reports - Summer 1998, Vol. 10, No. 1

Note: Only seleced cancer sites are presented. Lung, breast and colorectal cancer are the leading type of cancer which together accounted for over half of total cancer incidence and mortality in the 1991 - 1993 period.

Figure 7.2 shows a comparison of cancer incidence rates in selected sites for females between Canada and the Yukon for 1991-1993. For women in the Yukon, no cancer site had incidence rates significantly above the national level. For all cancer sites the incidence rate was 336.5 for Canadian females and 290.7 for Yukon females. The incidence rates for breast and colorectal cancer were lower for Yukon females than for Canadian females. The incidence rate of lung cancer was slightly higher for Yukon females than Canadian females.

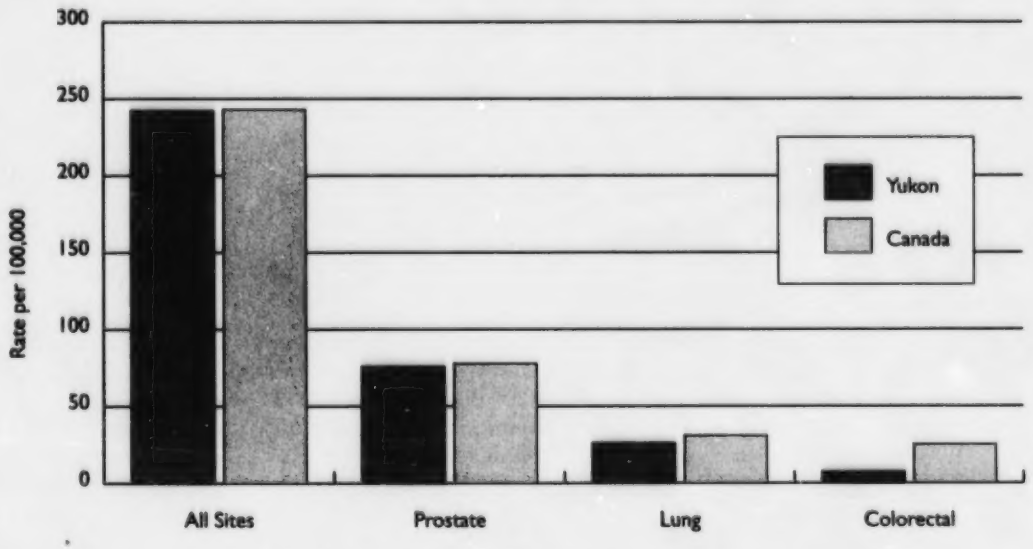
Between 1991 and 1993, cancer incidence rates (all sites) were higher for both Canadian and Yukon males than they were for Canadian and Yukon females. In the Yukon, the cancer incidence rate for all sites was 371.9 for males and 290.7 for females.

7.3 CANCER MORTALITY RATES

7.3.1 CANCER MORTALITY RATES, MALES, CANADA & YUKON

Figure 7.3

Age - Standardized Cancer Mortality Rates, Selected Sites, Males, Yukon and Canada, 1991 to 1993



Source: Statistics Canada, Health Reports - Summer 1998, Vol. 10, No. 1

Figure 7.3 shows a comparison of cancer mortality rates in selected sites for males between Canada and the Yukon for 1991-1993. For men in the Yukon, no cancer site had mortality rates significantly above the national level For all cancer sites, the mortality rate for Canadian males was 243.1 and for Yukon males 242.2. The mortality rates for lung and prostate cancer were similar for Canadian and Yukon males. The colorectal mortality rate for Yukon males was significantly different (much lower) from the Canadian rate.

7.3.2 CANCER MORTALITY RATES, FEMALES, CANADA & YUKON

Figure 7.4

Age - Standardized Cancer Mortality Rates, Selected Sites, Females, Yukon and Canada, 1991 to 1993

Source: Statistics Canada, Health Reports - Summer 1998, Vol. 10, No. 1

For 1991-1993, Yukon women had an apparently high mortality rate for all cancer sites combined. Figure 7.4 shows a comparison of cancer mortality rates in selected sites for females between Canada and the Yukon but not for any specific cancer. For all cancer sites, the mortality rate for Canadian females was 153.2 and for Yukon females 227.9. The mortality rate for lung cancer was also higher for Yukon females than Canadian females. The mortality rates for breast cancer and colorectal cancer were lower for Yukon females than Canadian females.

Between 1991 and 1993, cancer mortality rates (all sites) were higher for Canadian and Yukon males than Canadian and Yukon females. In the Yukon, the cancer mortality rate for all cancer sites was 242.2 for males and 227.9 for females. **Note caution above.**

7.4 COMMENTS

Cancer has become a somewhat popular preoccupation in the last 15 years or so. This is especially true in the Yukon. About 25% of Canadians die of cancer. Excluding skin cancer, about 50% of Canadians who develop cancer die of it. Only circulatory diseases, i.e. stroke, heart attack, aneurysms, cause more death than cancer.

In the Yukon the patterns of cancer-related illness and death are about the same as for the rest of Canada. Since cancer, in general, becomes more common with increasing age, we will see more cancer in the Yukon as the population ages. While cancer is becoming a more common cause of death this is largely because other causes, such as trauma and infectious diseases, are becoming less common. Prevention of death from one group of illnesses must lead to a proportional increase in death from some other cause. We may die older but we must die of something.

For the above reasons, concerns that we see cancer more often than in the "old days" are true. As mentioned, our small numbers make it very difficult to determine if our cancer rates differ significantly from the expected. Some cancers, such as breast and colon cancer, occur in families and it is worth exploring the possibility that this is more or less common in the Yukon. A recent extensive study from McGill University has determined that our food and water supply and our environment are cleaner than in southern Canada with regard to carcinogens.

We can look at known risks for cancer such as smoking which causes the most common cancer-causing death, that being lung cancer. Reducing these risks must reduce cancer. Besides this, prevention programs such as mammography, PAP smears, Hepatitis B vaccination and dietary education should be further developed.

Cancer diagnosis and management in the Yukon is done in partnership with the Cancer Control Agency of British Columbia. (Ed.)

7.5 SUMMARY

Cancer incidence and death rates in the Yukon occur in too small a population and in numbers too small to allow useful statistical analysis or comparisons. All indications are that there is no difference in cancer-related illness or death between Yukon and Canada.

Chapter 7: Cancer Incidence and Mortality

Data and Research Questions

- **What are the major risk factors for cancer in the Yukon?**

Priority for Action

- **Strategies to improve anti-smoking should be explored.**
- **Prevention programs should be audited and monitored for effectiveness and efficiency.**
- **Look at known risks for cancer such as smoking which causes the most common cancer causing death, lung cancer. Reducing these risks must reduce cancer. Besides this, prevention programs such as mammography, PAP smears, Hepatitis B vaccination and dietary education should be further developed.**
- **The possibility of developing a made-in-Yukon cancer detection and prevention program should be explored.**

CHAPTER 8: REPRODUCTIVE HEALTH

8.1 INTRODUCTION

Reproductive health covers such areas as fertility, family planning, healthy relationships, pregnancy, sexual health services and sexually transmitted disease prevention. This chapter will only address trends in:

1. **Pregnancy rates** (a composite of live birth, therapeutic abortion, stillbirth and miscarriage rates);
2. **Sexually transmitted disease (STD) prevalence** using chlamydia as a representative STD. Chlamydia is the most common STD and so is a useful indicator of the prevalence and incidence of STDs and of associated high risk behaviors in populations and their components.

8.2 CORRELATION OF RISK BEHAVIORS FOR UNINTENDED PREGNANCY AND STD INFECTION

8.2.1 OVERVIEW

Pregnancy rates are tenuously linked to STD prevalence. Increasing age of first intercourse and adopting safer sex behaviors such as condom use and non-penetrative sex practices generally reduce individual risk of ***both*** unintended pregnancy (Hatcher et al) and STD infection (Cates et al).

Other contraceptive devices properly used are also effective at reducing risk of unintended pregnancy (e.g. oral contraceptives, diaphragm, depo-provera, Norplant, intrauterine device, spermicides, etc.). While the use of condoms definitely reduces the risk of STDs, there is a growing body of scientific literature suggesting that use of barrier contraception such as certain spermicidal foams, jellies, creams or films may also provide a certain amount of STD protection (Niruthisard et al, Kreiss et al, Maticka-Tyndale).

Conversely, limiting the number of sex partners over the course of a lifetime, engaging only in mutually monogamous sexual relationships, and being tested for STDs before beginning a new sexual relationship will reduce individual risk of STD infection (Maticka-Tyndale). These behaviors have not been shown to reduce risk of unintended pregnancy.

8.2.2 PREVALENCE OF UNINTENDED PREGNANCY AND STD INFECTION IN THE YUKON

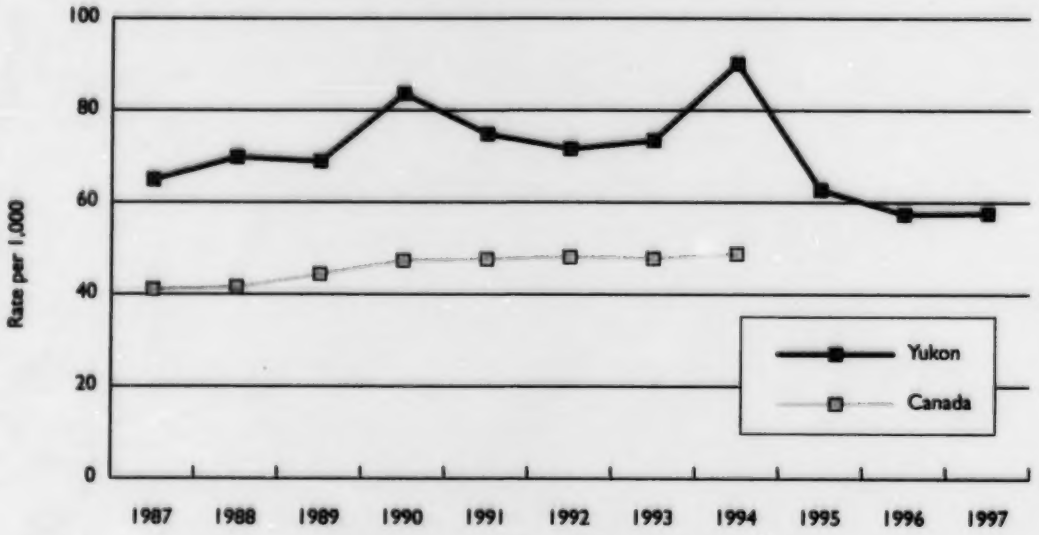
8.2.2.1 YUKONERS UNDER 20 YEARS OF AGE

When discussing teen pregnancy it is often customary to assume that these are unwanted pregnancies. This, of course, is not necessarily true. Particularly in traditional societies such as First Nations and Inuit and some Maritime communities, it is common for teen pregnancies to be planned and wanted. On the other hand, it is safe to assume that many, if not most, of these pregnancies are not planned. It is important to keep this in mind when interpreting this chapter. For the Yukon, wanted and unwanted teen pregnancies cannot be distinguished.

Teen pregnancy rose from 1987 to 1994 in the Yukon as it did in Canada. This increase is surprising in light of the intensive public awareness campaigns that began around the mid-eighties promoting condom use in response to AIDS. Between 1995 and 1997, however, Yukon teen pregnancy rates have fallen (Figure 8.1).

Figure 8.1

Pregnancies per 1,000 Women, Aged 15 to 19, Canada versus Yukon



Source: Yukon Bureau of Statistics, Statistics Canada

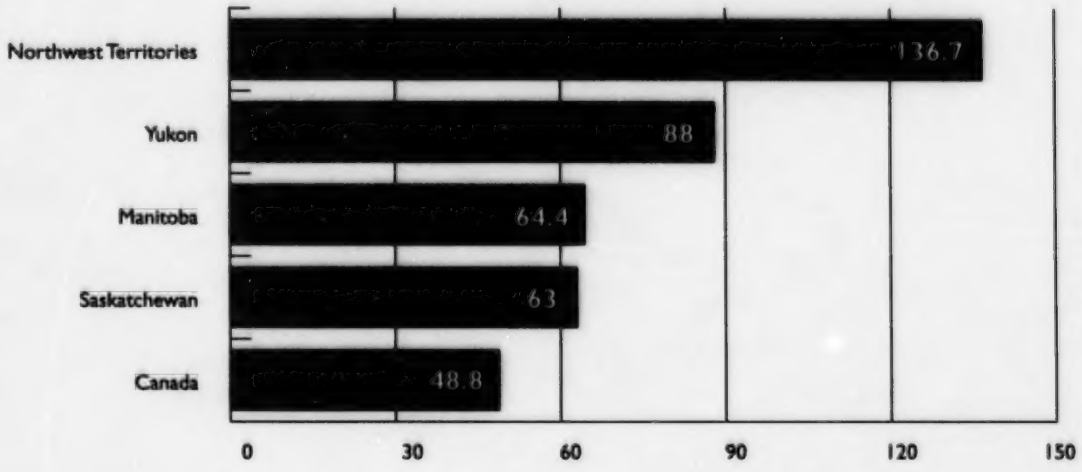
Note: Yukon pregnancy rates in Figure 8.1 do not include stillbirths and miscarriages. Due to low numbers, births and abortions by teenagers under 15 are included in the 15 to 19 year group.

Because the Yukon's population is relatively small, it is difficult to interpret certain short-term trends. Time will tell whether the downtrend in teen pregnancy will be sustained.

Teen pregnancy is an important social concern. To put the prevalence of Yukon teen pregnancy in perspective it is helpful to compare Yukon rates with other jurisdictions. Among Canadian provinces and territories, Yukon teen pregnancy rates lie between those in the Northwest Territories and Manitoba and Saskatchewan.

Figure 8.2

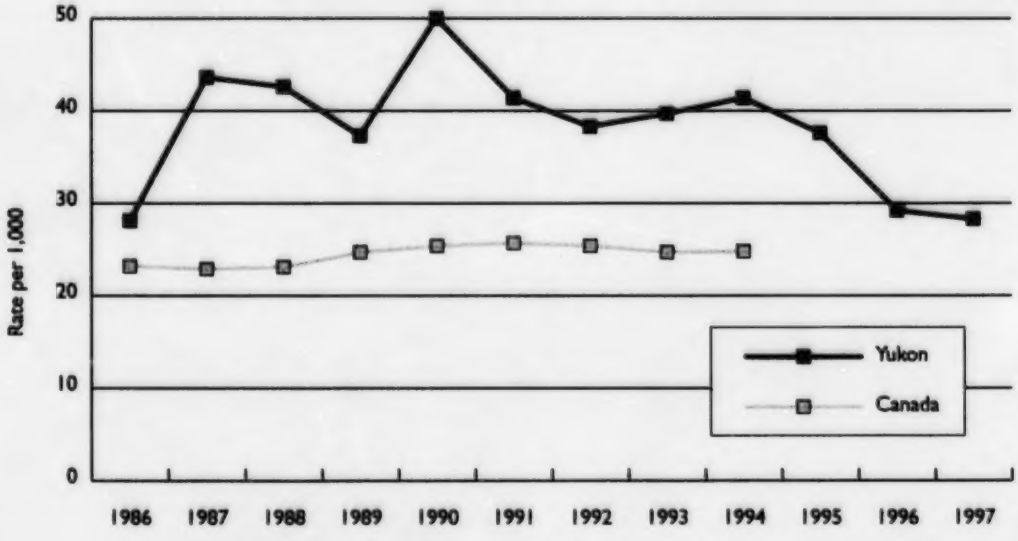
Pregnancies per 1,000 Women, Aged 15 to 19, Selected Jurisdictions, 1994



Source: Statistics Canada

Figure 8.3

Live Births per 1,000 Women, Aged 15 to 19, Canada versus Yukon



Source: Yukon Bureau of Statistics, Statistics Canada

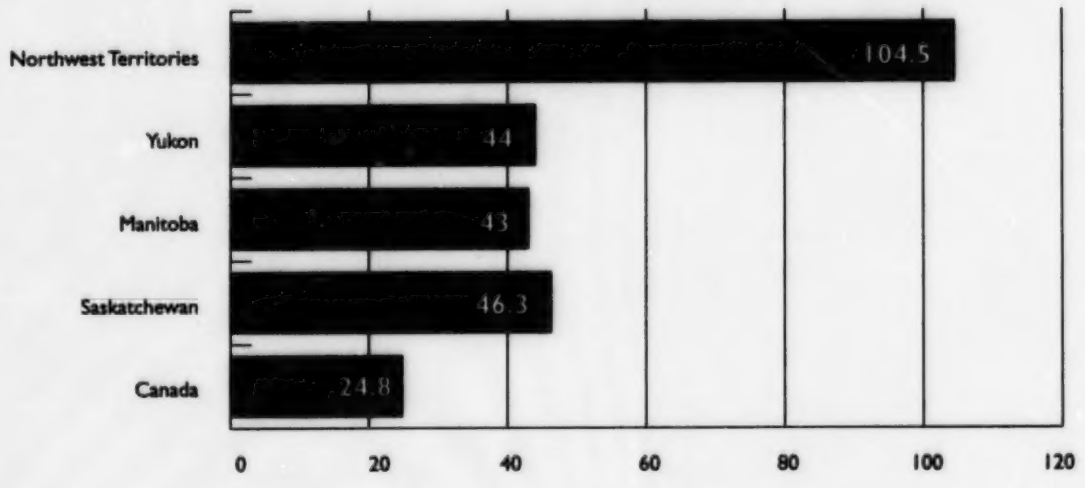
The teen pregnancy rates for Yukon, as seen in Figure 8. 2, may be artificially high. The highest teen pregnancy rate in 10 years in the Yukon was in 1994.

The Yukon teenage pregnancy rate is higher than the national average and so is the Yukon birth rate. While the Canadian teenage birth rate is on the increase, since 1991 the trend in the Yukon is the reverse.

Comparing the Yukon to other jurisdictions, the Yukon teenage birth rate was marginally lower than comparable data in Saskatchewan in 1994. The similarity among Yukon, Saskatchewan and Manitoba teenage birth rates in spite of higher Yukon teenage pregnancy rates probably arises from increased access to therapeutic abortion in the Yukon.

Figure 8.4

Live Births per 1,000 Women, Aged 15 to 19, Selected Jurisdictions, 1994



Source: Statistics Canada

CHLAMYDIA IN 15-19 YEAR OLDS

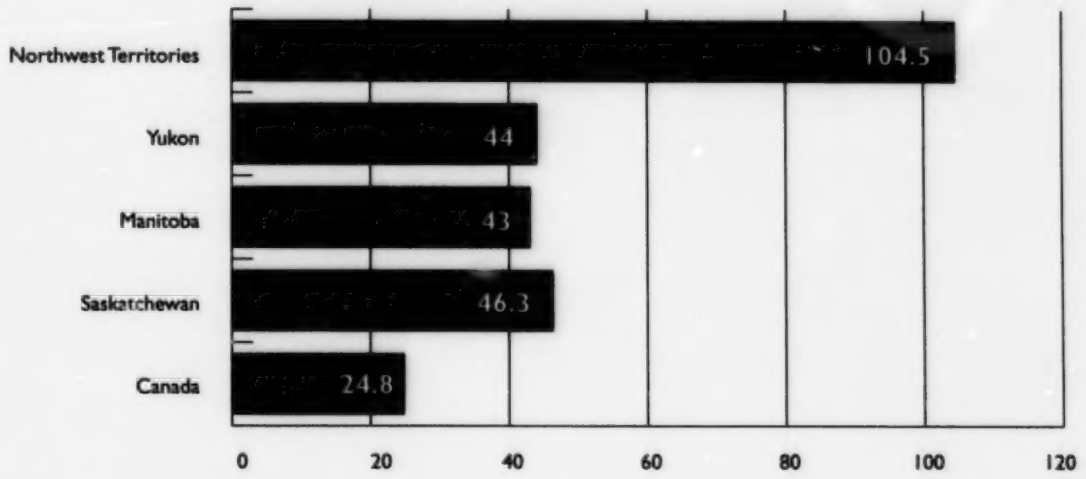
While reported chlamydia infection rates have been declining for the past several years throughout Canada (Figure 8.6), the rate of decline has been higher in the Yukon than the national average. Still, the reported Yukon teenage chlamydia infection rate was about four times the national rate in 1995.

These rates are not absolute and depend on how actively chlamydia is looked for and reported. Where public health facilities are easier to access, it would be expected that a higher percentage of the STDs prevalent in the population would be detected and reported.

The discrepancy between Yukon and Canadian teenage rates has several components. It may be due to increased prevalence in STD risk behavior among Yukon teens relative to their counterparts in the rest of Canada. Increased screening is also a likely explanation for the Yukon's higher reported rates. Since chlamydia is treated and usually cured after diagnosis, widespread screening should result in a relatively rapid decline in reported

Figure 8.4

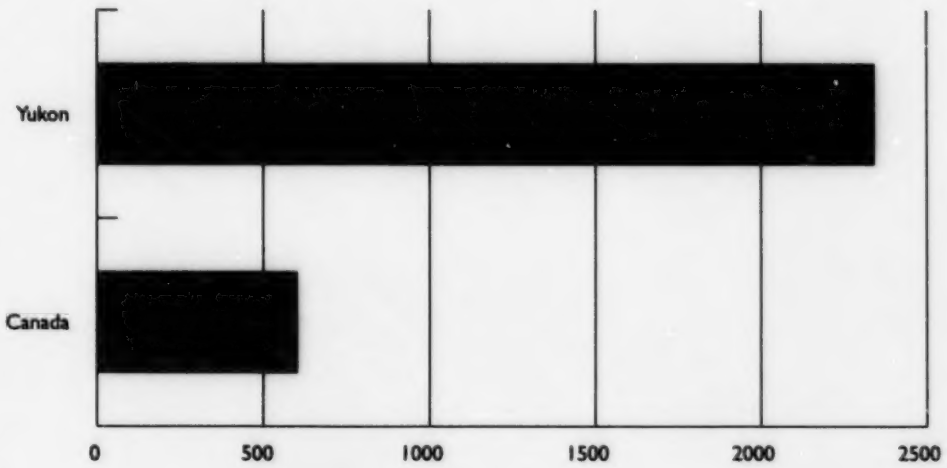
Live Births per 1,000 Women, Aged 15 to 19, Selected Jurisdictions, 1994



Source: Statistics Canada

Figure 8.5

Reported Chlamydia Infection per 100,000 Population, Aged 15 to 19, Canada versus Yukon, 1995

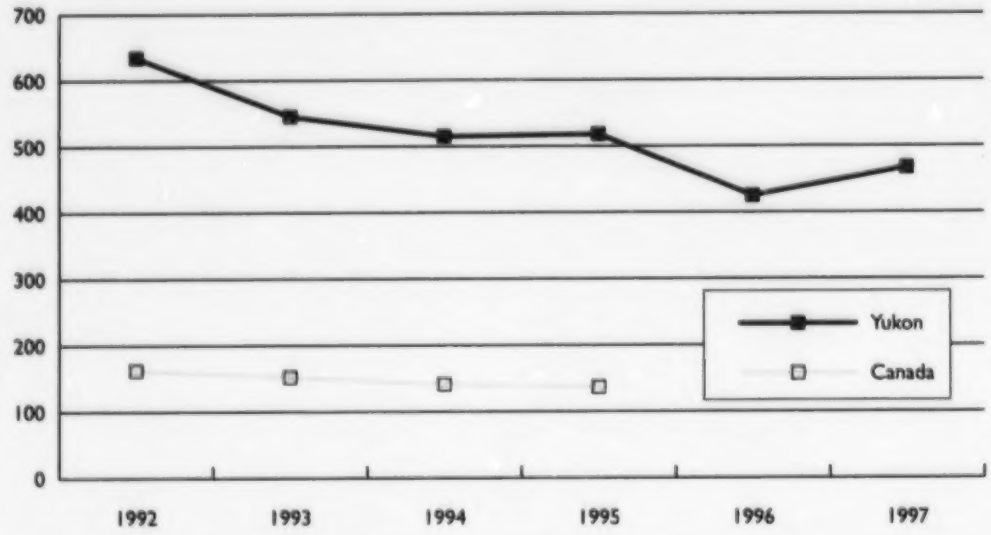


Source: Yukon Communicable Disease Control Unit

rates relative to the rest of Canada. This is what seems to be happening. Unfortunately there is no way to determine the relative contribution of increased testing or increased high risk behavior to the higher reported rates. This is alarming data given that risk behaviors associated with chlamydia infection are the same for HIV infection.

Figure 8.6

Trend in Reported Chlamydia Infection per 100,000 Population, All Ages, Canada versus Yukon



Source: Laboratory Centre for Disease Control, Yukon Communicable Disease Control Unit

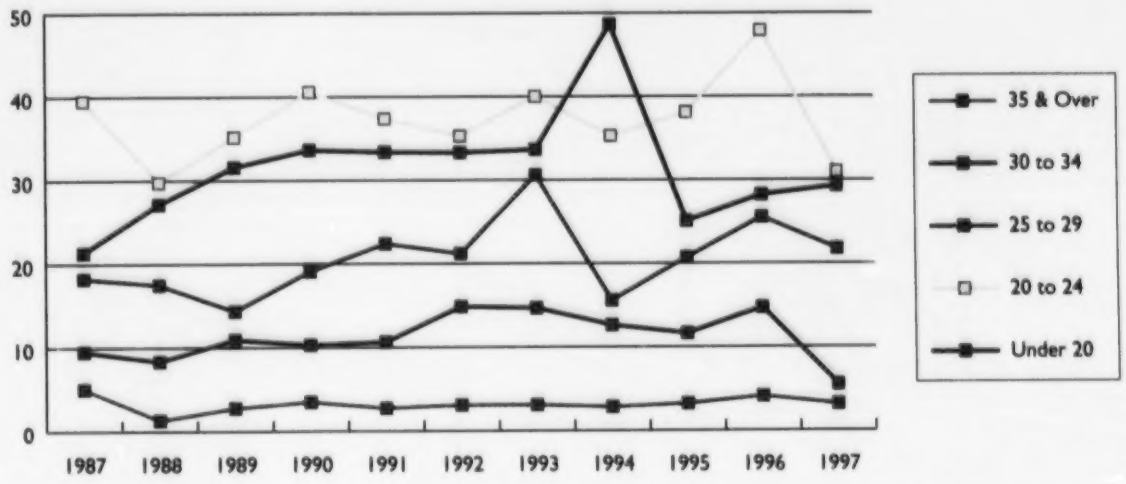
The decline in Yukon chlamydia infection rates is an encouraging trend. There is no reason to assume that this is related to decreased testing rather than to a true decrease in prevalence. The safest assumption is that at least some of the high reported rate is due to relatively more high risk behavior among Yukon teens. That chlamydia infection was able to take such a strong foothold among the Yukon teenage population underscores the potential susceptibility of that population to an HIV epidemic.

8.2.2.2 YUKONERS AGED 20 TO 24

The public health sector sometimes overlooks preventing unintended pregnancies and STDs among people beyond their teenage years. While it is difficult to understand to what extent pregnancies among women in their early twenties are unintended, Yukon rates of therapeutic abortion are highest among women aged 20 to 24.

Figure 8.7

Yukon therapeutic abortion per 1,000 women by age group



Source: Yukon Bureau of Statistics

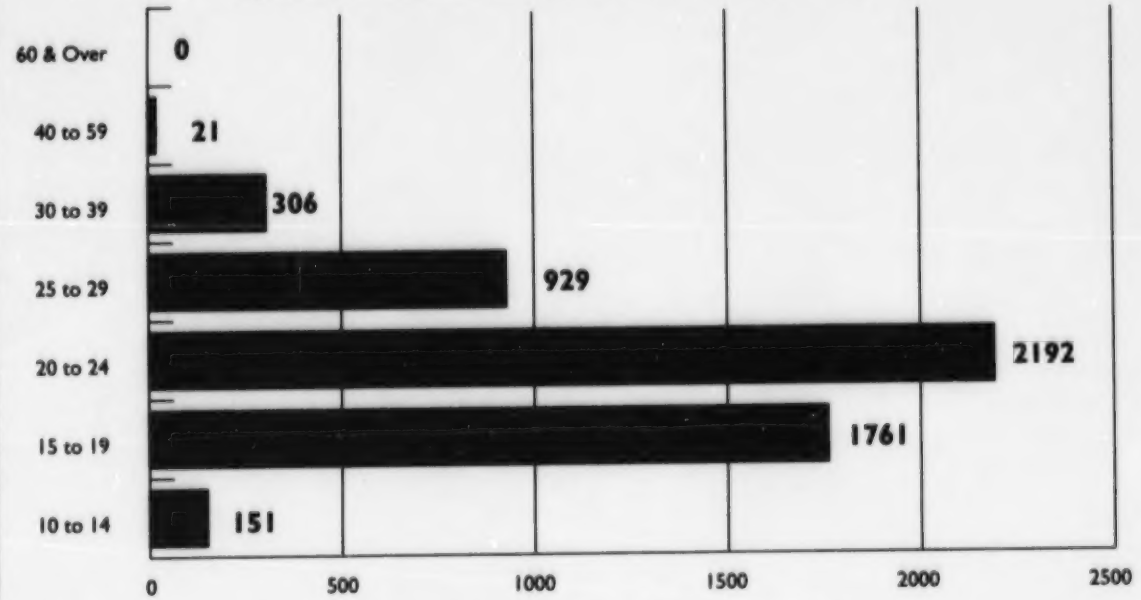
Like the Yukon, Canada as a whole has its highest therapeutic abortion rate among 20 to 24 year olds (Wadhera and Miller). Pregnancy prevention programs targeting this age group might have an enormous impact on reducing personal suffering and social services and health care spending. In Canada, single motherhood is most common among mothers under the age of 25 (Wadhera and Miller). There is a link between single motherhood and elevated risk of mental health problems (Lipman). As stated earlier, families headed by single mothers are more likely to have children with emotional, behavioral and cognitive problems than two-parent families. The 1996 Census of Canada found that the number of lone-parent families rose by 28.4% from 1991 to 1996 in the Yukon. In Canada the same number rose by only 19.3%.

The Census also found that lone-parent families headed by men accounted for about 17% of all lone-parent families in the Yukon in 1996. There is little knowledge available on the age profile of men heading lone-parent families in the Yukon nor of the risk factors for children in these families.

Not only are Yukoners in this age group struggling in their efforts at avoiding unintended pregnancy. Yukon-reported chlamydia infection rates are highest among people from 20 to 24.

Figure 8.8

Reported Yukon Chlamydia Infection per 100,000, Population, by Age Group, 1996



Source: Yukon Communicable Disease Control Unit

Highest reported prevalence of chlamydia among 20 to 24 year olds is also seen at the national level (Patrick). Because STD risk behavior seems to be highest among people in their early twenties, this age group may be the most susceptible of all age groups to an HIV epidemic.

8.2.2.3 YUKONERS AGED 25 TO 29

Yukoners in this age group are in a transition toward increased competency in contraceptive use and avoidance of STD risk behavior. Therapeutic abortion rates are below those for people from 15 to 24 suggesting that unintended pregnancy occurs less frequently among couples in their later twenties (Figure 8.7). Chlamydia infection rates are also below those among 15-24 year olds, though still relatively high (Figure 8.8). These trends among Yukoners aged 25 and 29 in relation to other Yukon age groups match national trends for this age group in relation to other age groups.

8.2.2.4 YUKONERS AGED 30 AND OVER

Rates of therapeutic abortion in this age group are significantly lower that rates among people younger than 30 (Figure 8.7). Chlamydia infection rates are also much lower among people in their thirties and beyond (Figure 8.8).

8.2.2.5 WHITEHORSE VERSUS RURAL

The preceding data suggest that Yukoners under 30 have the highest risk of unintended pregnancy and STD infection. This section compares Whitehorse birth rates and chlamydia prevalence to those outside Whitehorse among Yukoners younger than 30.

For the past several years the Yukon has seen declining pregnancy rates and birth rates. Birth rates have generally been higher outside of Whitehorse.

Though the small numbers and the volatility of the figures should suggest caution, the persistence of the volatility almost entirely above the Whitehorse trend suggests that births are higher in rural teens.

A similar gap between Whitehorse and outside Whitehorse birth rates is apparent among Yukoners aged 20 to 24; however the difference is less pronounced than same among Yukon teenagers. This marks a convergence of Whitehorse and outside Whitehorse birth rates associated with increased maternal age. It may be that the difference in teen births is related to cultural norms as much as to "unwanted teen pregnancy" or that confidential access to advice and contraception is more difficult in the communities.

The convergence of Whitehorse and outside Whitehorse birth rates with maternal age is slightly more clear in the 25 to 29 population. Again, the figures are small.

Reported chlamydia rates are higher outside Whitehorse than in Whitehorse. From 1994 to 1996 about 64% of reported chlamydia cases were in Whitehorse each year. Whitehorse contains roughly 70%-72% of the Yukon's population.

Yukoners between 15 and 24 living outside Whitehorse may be at highest risk for unintended pregnancy and STD infection given the higher birth rate among these Yukoners relative to their Whitehorse cohorts and a high reported incidence of chlamydia. As stated earlier, reported chlamydia prevalence is highest among Yukoners between 15 and 24 (Figure 8.8). Reporting bias plays an unknown, but probably important, role here too.

8.2.3 SOCIAL COST OF UNINTENDED PREGNANCY AND STDs

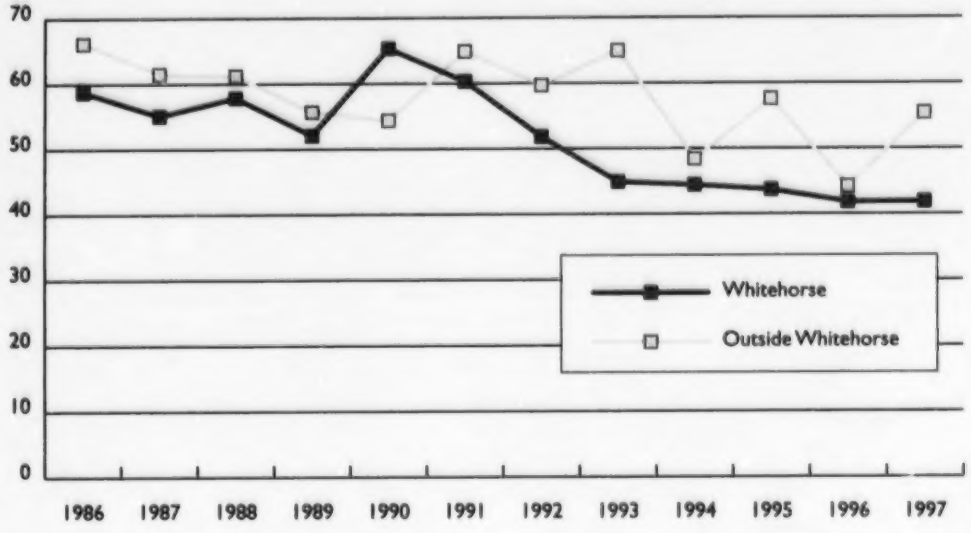
In general, all STD infections and their sequelae can be cured and/or treated with various degrees of success (e.g. chlamydia, gonorrhea, genital warts, hepatitis B, etc.). Despite this, STD prevalence has a high social cost in terms of personal suffering and health care spending. There is no vaccine against human immunodeficiency virus (HIV) and no cure for AIDS. It is therefore imperative that the public health sector implement with caution initiatives aimed only at reducing unintended births and offering target groups limited or no protection from HIV.

That being said, the public health sector must not ignore strategies aimed at reducing unintended births by promoting use of a variety of contraceptives, not just condoms. Condoms have a lower contraceptive efficacy than many other contraceptive devices. Moreover, several national studies reveal inconsistent compliance with condom use. The findings in this chapter link unintended pregnancy to lower maternal age (under 25 years) in the Yukon. In Canada, mothers who have children before the age of 25 are more likely to be single rather than married or living in a common-law relationship. Findings from the National Longitudinal Survey of Children and Youth suggest that children of lone-parent families are at increased risk of suffering from emotional, cognitive and behavioral problems.

The Report on the Royal Commission on New Reproductive Technologies suggests that reproductive health promotion initiatives encourage the use of dual forms of contraception to protect against both STDs and unintended pregnancy.

Figure 8.9

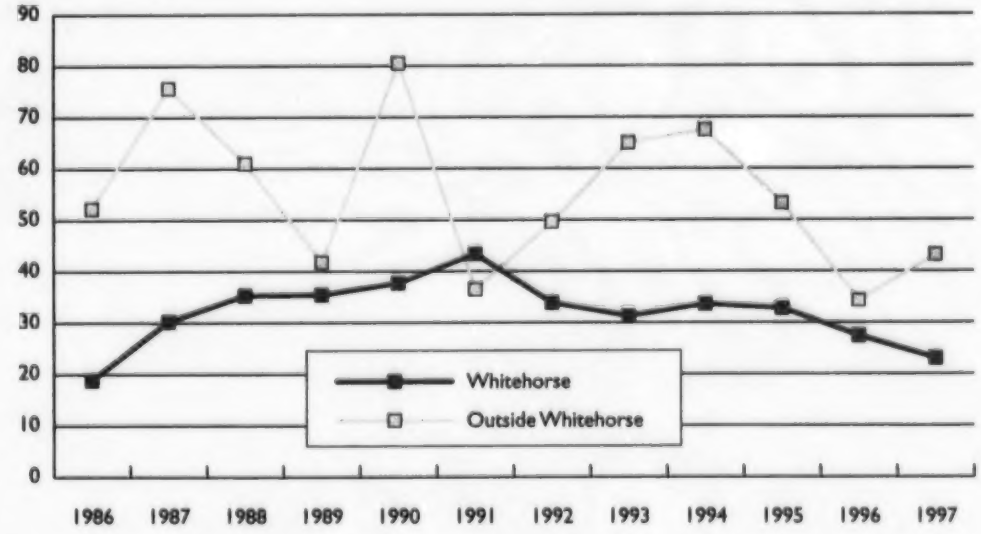
Yukon Live Births per 1,000 Female Population, All Ages, Whitehorse versus Outside Whitehorse



Source: Yukon Bureau of Statistics

Figure 8.10

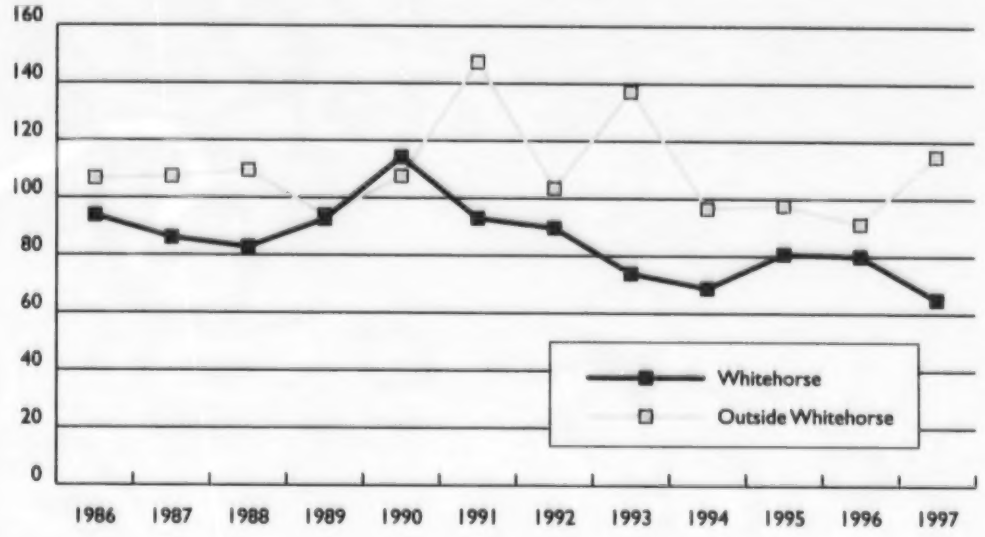
Yukon Live Births per 1,000 Female Population, Younger Than 20 Years, Whitehorse versus Outside Whitehorse



Source: Yukon Bureau of Statistics

Figure 8.11

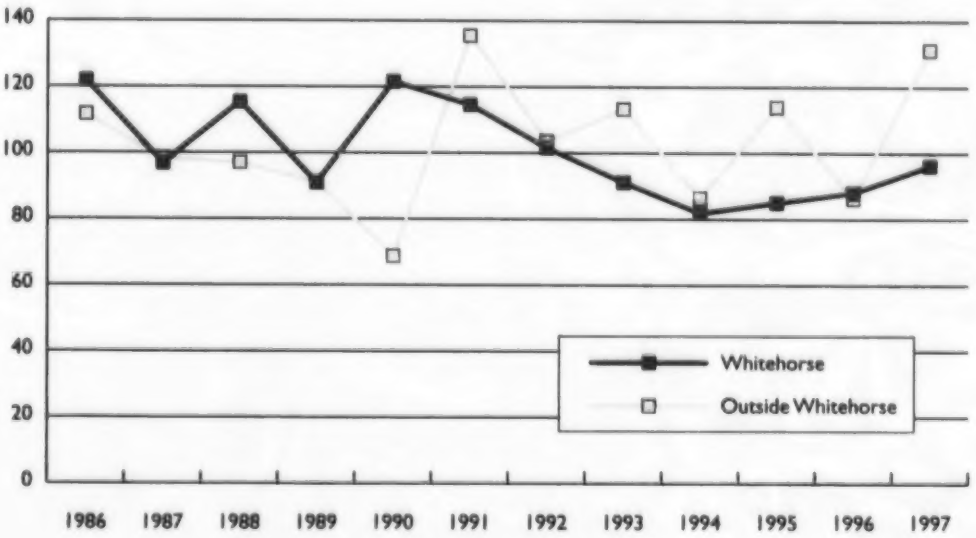
Yukon Live Births per 1,000 Female Population, Aged 20 to 24, Whitehorse versus Outside Whitehorse



Source: Yukon Bureau of Statistics

Figure 8.12

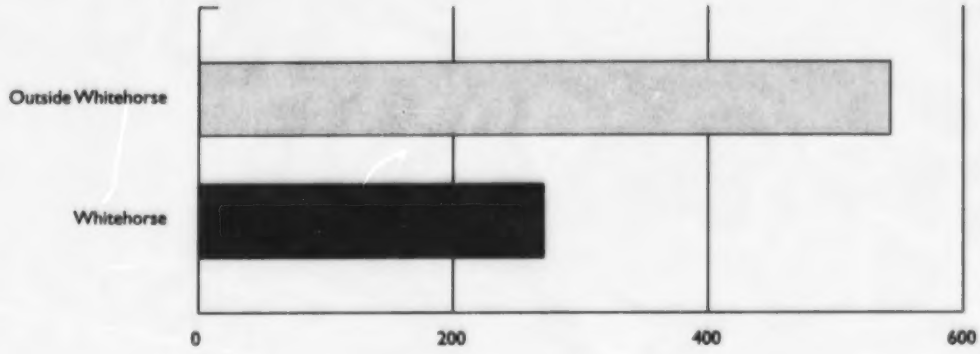
Yukon Live Births per 1,000 Female Population, Aged 25 to 29, Whitehorse versus Outside Whitehorse



Source: Yukon Bureau of Statistics

Figure 8.13

Yukon Chlamydia Infection per 100,000 Population, Whitehorse versus Outside Whitehorse, All Ages, 1996



Source: Yukon Communicable Disease Control Unit

8.3 SUMMARY

1. The Yukon teen pregnancy seems to be declining and now approaches the Canadian rate.
2. Though it is declining, the Yukon fertility rate is still above the Canadian average.
3. Chlamydia in Yukon teens is reported at four times the Canadian rate.
4. As in Canada, abortions are at their highest rate in Yukon women aged 20 to 24.
5. The peak rate of STDs occurs in the 20 to 24 age group, closely followed by the 15 to 19 group. The rate drops rapidly after 30.
6. The fertility rate, teen pregnancy rate and STD rate are all higher in rural Yukon than in Whitehorse.

Chapter 8: Reproductive Health

Data and Research Questions:

- To what extent are Yukoners, especially Yukoners under 30 years of age, engaging in risk behaviors? Which of these risk behaviors are most sensitive to public health initiatives?
- To what extent are higher birth rates outside Whitehorse due to unintended pregnancy?
- To what extent does the exclusion of stillbirth and miscarriage data in calculating pregnancy rates affect our understanding of pregnancy trends?
- Has the high incidence of chlamydia in the Yukon increased the prevalence of pelvic inflammatory disease, ectopic pregnancy and infertility relative to other Canadian jurisdictions?
- What is the prevalence of cervical cancer in the Yukon? Cervical cancer is linked to early age of onset of sexual activity and multiple sex partners[1].

Priority for Action

- The high risk for unintended pregnancy and STD's in those under 30 is cause for concern.
- Family planning services are perhaps too limited and public, and may be perceived by users to lack confidentiality, especially in the communities.
- Pregnancy and STD reduction campaigns should advocate use of dual forms of contraception (e.g. condoms and oral contraceptives).
- On-going research should be conducted to understand the determinants of adoption of each of the risk behaviors.

CHAPTER 9: COMMUNICABLE DISEASES

9.1 INTRODUCTION

Not long ago communicable diseases were the major cause of morbidity and mortality. With the development of immunization, antibiotics and other public health preventive and control measures, this is no longer so. Despite this, communicable diseases again seem to be increasing the pressure on their human hosts. There are "new" diseases such as HIV infection, "old" diseases such as hepatitis C that can now be more easily detected and well known diseases, such as tuberculosis, making a comeback. Sexually transmitted diseases (STDs) continue to occupy a large slice of the resources in the control of communicable diseases.

Increasing antibiotic use and consequent bacterial resistance and spreading anxiety over routine immunization programs contribute to the new foothold communicable diseases are establishing and to the justifiable concern of public health professionals.

Yukon communicable disease rates are generally in line with Canadian rates. The major differences are chlamydia and hepatitis C rates. Causes for this will be explored later in this chapter.

9.2 COMMUNICABLE DISEASE RATES

As all these rates measure infections per 100,000 population, the actual number of cases seen in any year in the Yukon can be roughly calculated by dividing the rate by three, i.e. assuming a Yukon population of 30,000. It can be readily seen in Figures 9.1 - 9.4 that many of these reported diseases are represented by only a few cases per year, often only one case.

It is important to know that none of these numbers are absolute. These are the reported cases only. Many of these infectious diseases may occur in mild forms such that treatment is never sought. Others can persist as a carrier state without symptoms. Others are simply diagnosed as a respiratory or gastrointestinal illnesses and managed symptomatically without an exact diagnosis being made. Others, though diagnosed, are not reported through oversight or error.

High reported levels of infectious diseases, especially those having few symptoms, may simply be due to more aggressive surveillance and testing programs (surveillance artifact). Hepatitis C, a disease that most often has no symptoms, has rates that appear to be rising very rapidly in the Yukon but this disease has been around for a long time and the increase is probably due to newer tests and campaigns encouraging people to be tested.

Note that in describing communicable disease rates the term "reported rates" is most often used to avoid confusion over what exactly is being measured.

Figure 9.1: COMMUNICABLE DISEASE RATES
Vaccine Preventable Disease
(per 100,000) Yukon, 1995 - 1997

VACCINE PREVENTABLE DISEASES	1994	1995	1996	1997
Haemophilus Inf. meningitis	0.0	0.0	0.0	0.0
Diptheria, Polio & Tetanus	0.0	0.0	0.0	2.99
Measles	0.0	0.0	6.40	0.0
Mumps	0.0	3.3	15.90	2.99
Pertussis	13.3	33.2	420.40	20.96
Rubella	0.0	0.0	0.0	5.98
Tuberculosis	29.9	6.6	19.10	5.98

Hemophilus Influenza meningitis was a common cause of death and disability, particularly in children under five years of age, until the introduction of a vaccine in Canada in 1988. This vaccine is now part of the normal childhood vaccination program and this disease has all but disappeared.

One case of Diptheria occurred in 1997 and this can be counted as a vaccination program failure.

Measles still occur as occasional cases or outbreaks in Canada. In sub-Saharan Africa it is still a major cause of death in children under five. With the introduction of a second dose of vaccine as part of the normal immunization program in 1996-97, the rates in Canada are going down and it is hoped that this disease can be eliminated from North America.

Pertussis (whooping cough) was on the increase in Canada in the mid 1990s. This was largely due to the concern about the side effects of the whole cell vaccine used at the time. With the recent introduction of acellular vaccine the decline in this disease should be sustained.

FIGURE 2 COMMUNICABLE DISEASE RATES
Sexually Transmitted Diseases
(per 100,000) Yukon, 1995 - 1997

SEXUALLY TRANSMITTED DISEASES	1994	1995	1996	1997
AIDS	0.0	3.3	0.0	0.0
Chlamydia	508.3	518.3	458.6	518.1
Gonorrhea	43.2	66.4	31.80	0.0
Hepatitis "B"	16.6	10.0	23.30	0.0
HIV	11.8	3.1	6.4	5.98
Syphilis (early)	3.3	0.0	0.0	0.0

AIDS, meaning the full blown effects of infection with the HIV virus, was reported as one case in the Yukon in 1995.

Chlamydia is slowly on the decrease though its reported incidence is much higher in the Yukon than in the rest of Canada. Reasons for this are discussed in the chapter on Reproductive Health.

Gonorrhea declines as chlamydia is tested for and treated more aggressively. Gonorrhea is generally more sensitive to antibiotics than chlamydia and its rapid decline probably represents "collateral damage".

Hepatitis B is expected to decrease to almost zero as the effects of the childhood vaccination program become noticeable. The Yukon changed vaccination policy from doing all school-aged children to including the vaccine in the infant vaccination program as is now becoming the norm across Canada. This will result in a better coverage rate and more effective resistance. This is the first vaccine against cancer. Most primary liver cancers are caused by hepatitis B infection.

HIV levels remain about constant but the numbers are small.

Syphilis remains rare and the same comments apply as for gonorrhea. The organism causing syphilis is very sensitive to a wide range of antibiotics.

FIGURE 9.3 COMMUNICABLE DISEASE RATES
Enteric, Systemic, Viral Diseases
(per 100,000) Yukon, 1995 - 1997

ENTERIC, SYSTEMIC, VIRAL DISEASES	1994	1995	1996	1997
Amoebiasis	3.3	13.3	3.20	8.98
Campylobacteriosis	33.2	13.3	28.70	26.95
E. Coli (pathogenic)	0.0	0.0	0.0	0.0
Giardiasis	93.0	122.9	70.10	413.2
Hepatitis "C"	46.5	182.7	245.20	260.5
Shigella	0.0	10.0	0.00	5,98
Salmonella	13.3	13.2	25.50	20.96

All of these diseases, except Hepatitis C, are food and/or water borne. They tend to occur in outbreaks but can be sporadic. Their rates reflect general standards of hygiene and cleanliness. Rates are in line with expected figures for Canada.

Hepatitis C shows a very steep increase in incidence. This is likely due to surveillance artifact as mentioned in the introduction. Widespread testing started in 1994 and concerns about its transmission through the blood supply have resulted in extensive publicity and specifically in two publicity campaigns in the last two years in the Yukon. It is expected to occur in 1-3% of the Canadian population and Yukon figures are still well within this range. The vast majority of these cases are not related to the blood supply. So far there have been no proven cases of transmission through the blood supply for those transfused in the Yukon. Further tracing and lookback work continues and it is expected that 5-10 such cases may be found.

FIGURE 9.4 COMMUNICABLE DISEASE RATES
Meningitis and Encephalitis
(per 100,000) Yukon, 1995 - 1997

MENINGITIS & ENCEPHALITIS	1994	1995	1996	1997
Meningococcal	0.0	0.0	3.20	0.0
Pneumococcal	0.0	0.0	0.00	2.99
Viral	0.0	0.0	3.20	0.0

Note: These diseases are uncommon and can occur in outbreaks or sporadically.

9.3 OTHER COMMUNICABLE DISEASES

Influenza normally occurs in the Yukon in much the same patterns as in the rest of Canada. In the summer of 1998 an increase in respiratory diseases in cruise ship passengers, perhaps picked up in the Yukon or Alaska, led to a surveillance program for influenza being instituted in the summer. This is not normal practice. Eight cases of influenza A, H3N2 Sydney, were identified among Yukoners. It may be that influenza persists as an endemic infectious disease in summer in these high latitudes. Further surveillance will answer this question and will be done year-round.

Antibiotic resistant bacteria have been identified in the Yukon as elsewhere. There were a handful of methicillin resistant staphlococcal (MRSA) infections leaving some carriers. Vancomycin resistant enterococcal (VRE) infections has been identified at least once in a person transferred from a southern hospital. There has been no resistant tuberculosis. A project to identify and characterize resistant streptococcus pneumoniae is underway as part of a northern initiative with Alaska, British Columbia and the Northwest Territories.

Hanta virus is known to have a sylvatic reservoir in the Yukon but no human cases have been identified.

Rabies is endemic only on the Arctic coast of the Yukon and has not recently been reported in animals south of the coast.

Lyme Disease is a theoretical possibility as the tick necessary for its transmission is known in the southern Yukon. No organisms have been identified in Yukon ticks and Lyme Disease has not been reported in Yukon people.

Hydatid Disease occurs sporadically in the Yukon. This happens mainly among dog owners who feed their dogs raw wild meat.

9.4 VACCINATION

Vaccination is one of the few health interventions that costs less to do than not to do per life saved. There is no net cost to society per life saved.

Because many of the vaccine preventable diseases have never been seen or experienced by today's parents there is a slow but definite trend to question the use of vaccination and to refuse it on behalf of their children. The effects of this can be seen even in the Yukon in the rates of pertussis and in the case of diptheria. Vaccination levels in the Yukon remain high at 89.23% though this is marginally lower than noted in 1994.

While vaccination may be between 70 and 100% effective in protecting an individual from disease, this is not its only function. If enough people are vaccinated it, is very difficult for a disease to spread in that population because the chance of the organism coming in contact with a susceptible person is much decreased. This principle is called "herd immunity" and is at least as important as the individual protection offered by vaccination. Vaccination should therefore not be offered as something depending only on personal choice of risk. The higher the percentage of vaccination in a population the less the chance of even a susceptible person being infected.

9.5 YUKON COMMUNICABLE DISEASE CONTROL

This unit, as well as providing confidential any time walk-in services, is responsible for the surveillance, reporting and control of communicable diseases in the Yukon. It acts as a resource center for other health care providers and institutions such as day care centers, correctional and chronic care facilities. Under the auspices of the Medical Officer of Health, it is also responsible for formulating policy surrounding communicable diseases.

9.6 SUMMARY

1. STDs, especially chlamydia, continue to occur in higher rates in the Yukon than in Canada.
2. Because of the aggressive case finding and reporting of hepatitis C, the rates seem to be increasing but this is probably not the case. There is no proven case of a Yukon blood transfusion leading to hepatitis C but it is expected that there will be a few when all the investigations have been done.
3. Influenza may be endemic in the Yukon in the summer. Further surveillance will clarify this picture.
4. The slight drop in the vaccination rate is of some concern.
5. To keep pace with the increasing complexity of modern disease surveillance and recording/reporting, a proper computer surveillance system is needed.

Chapter 9: Communicable Diseases

Data and Research Questions:

- **See this section in Chapter 8: Reproductive Health.**

Priority for Action

- **Explore opportunities to improve communicalbe disease information system.**
- **See this section in Chapter 8: Reproductive Health.**

CHAPTER 10: WHERE TO FROM HERE?

10.1 INTRODUCTION

The Government of Yukon has only recently become responsible for public health personnel and infrastructure in the Yukon. This is the first report produced without outside influence or help. The time is right to establish more clearly what the health status reporting system should be and how it should work.

The Yukon Health Status Report should be a work in progress rather than a project to be done from time to time. Reports on one or another aspect of health status can be presented formally at least yearly and a full report, a summary of the three years of statistics and reporting, can then be presented as required by legislation.

The office of the MOH should be required to produce and maintain these reports with the help of a committee of people who have access to the necessary data and how can assist in its collation The reports should ideally not be seen as product of government but should be an independent product of the off os the MOH. This has been more or less the case with this report. While this risks criticism by the MOH of government policy, it will lend legitimacy to the process and allow government to distance itself from ideas or opinions that may make public health sense but not be politically palatable.

A Public Health web page on the government we site would be the ideal way to make the information widely available.

10.2 MISSING DATA

The 1998 Health Status Report has significant gaps mostly because the data are incomplete, have not been gathered or because there has been no demonstrated need to gather such data. There is no doubt that data should only be gathered with a purpose in mind. While this seems to make sense it is often not the case. Broadly data are used to define a problem, to help formulate solutions and to measure the effectiveness of those solutions.

While programs may be effective and efficient, there are data deficiencies, from a health reporting point of view, in the following areas:

- Drug and alcohol abuse
- Family violence
- Mental health
- Disability
- Long term care
- Home care
- Cancer prevention and detection
- Trauma
- Specific diseases e.g. diabetes
- Environmental health

By working with the people from the territorial and First Nations governments, agencies and communities, a more complete data collection system can be set up. Many of these gaps in data are also of concern in other provinces and territories, exploring linkages with national health data systems would be beneficial. This will provide useful information for Yukoners in health and social services planning and for this interested in health.

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